"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R000927930007-4

Transformation of organosulfur ... S/081/62/000/010/045/085
B160/B180

of the decomposition processes. [Abstracter's note: Complete translation.]

Card 2/2

APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R000927930007-4"

"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R000927930007-4

S/081/62/000/005/040/112
B151/B101

AUTHORS: Tits-Skvortsova, I. N., Rybnikova, A. A., Kuvshinova, N. N.

TITLE: Transformation of -decylthiophane in the presence of an aluminosilicate catalyst

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 5, 1962, 264, abstract 5Zh238 (Sb. "Khimiya seraorgan. soyedineniy, soderzhashchikhsya v neftyakh i nefteproduktakh. v. 4". M., Gostoptekhizdat, 1961, 136-140)

TEXT: The reaction between furfural and $C_9H_{19}MgBr$ is used to obtain -nonylfurylcarbinol (I) (here and later the calculated yields in %, b. p. in °C/mm Hg, m. p. in °C, $n^{20}D$ and d_4^{20}): 76, 144-145/5, 3.9, 1.4665, 0.9326; by the action of HCl and C_2H_5OH I is converted to the ethyl ester of -keto-tetradecanic acid (II), 35, 142-144/3, 17, 1.4508, 0.9227; by the reduction of II with $LiAlH_4$ tetradecandiol-1,4 (III) is

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obtained: 73-98, 172-174/5, 57.3, -, -; by the reduction with HBr gas III is converted to 1,4-dibromo-tetradecane (IV), 70, 182-184/9, -, 1.4857, 1.2174; by the reaction of IV with Na_2S -decylthiophane (V) is obtained: 75-80, 148.5-149/5.5, -, 1.4804, 0.8959; the complex with $HgCl_2$ has a m. p. 47.5°C. The contact conversion of V on an aluminosilicate catalyst (ASC) is studied. V is passed with a volume rate of 0.5 hrs^{-1} over ASC (73.3% ASC on the wt. of V) in a stream of N_2 at 300°C. H_2S is obtained in a yield of 53.7% (on the S content in V) and tetradecene-1, $C_{14}H_{28}$, b. p. 80-82°/8 mm Hg, $n^{20}D$ 1.4383, d_4^{20} 0.7841. [Abstracter's note: Complete translation.]

APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R000927930007-4"

"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R000927930007-4

TITS-SKVORTSOVA, I.N.; RYBNIKOVA, A.A.; KUVSHINOVA, N.N.

Synthesis and catalytic conversions of α-decylthiophane over an aluminosilicate catalyst. Zhur.ob.khim. 30 no.10:3316-3319 O '61. (MIRA 14:4)

1. Moskovskiy gosudarstvennyy universitet.
(Thiophene)

APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R000927930007-4"

"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R000927930007-4

KUVSHINOVA, O. P.

ALTERGOT, V. F., LAVYGINA, K. S., and KUVSHINOVA, O. P. "Destructive Changes of the Protoplasm in the Course of Lysis in the Species Fusarium," Comptes Rendus (Doklady) de l'Academie des Sciences de l'URSS, vol. 31, no. 3, 1941, pp. 286-289.

511 P444 SO: SIRA, SI 90-53, 15 Dec. 1953

APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R000927930007-4"

"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R000927930007-4

KUVSHINOVA, O. P.

KUVSHINOVA, O. P.: "The effect of various granule dimensions of superphosphate, alone and in combination with humus, on the harvest of agricultural crops". Moscow 1955. All-Union Sci Res Inst of Fertilization, Agricultural Engineering, and Soil Science. (Dissertations for the degree of Candidate of Agricultural Science.)

SO: Knizhnaya Letopis' No. 50 10 December 1955. Moscow.

APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R000927930007-4"

"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R000927930007-4

CULTIVATED PLANTS. Potatoes. Vegetables. Cucurbita.

ABS. JOUR. REF ZHUR - BIOLOGIYA, NO. 4, 1959, No. 15648

AUTHOR Kuvshinova, O.P.

INST. Kuznetskaya Agric. Experimental Station

TITLE :Fertilization of Potatoes in the Chernozems of the Southeast.

ORIG. PUB. : S. Kh. Povolzh'ya, 1957, No.12, 19-22

ABSTRACT .Briefly generalized are the findings of tests with fertilization of potatoes at the Kuznetskaya agricultural experimental station during the period from 1938 to 1946; also given are the results of tests in recent years. On the average during the first 7 years of observations, the greatest gain (70 centners/hectare) of tuber crop-yield was obtained from joint placement of nitrogen and phosphorus fertilizers, in case of 151.7 centners/hectare

CARD: 1/3

APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R000927930007-4"

"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R000927930007-4

AUTHOR :
COUNTRY : CULTIVATED PLANTS.
ABS. JOUR. : REF ZHUR - BIOLOGIYA, NO 4, 1959, No. 15648
AUTHOR :
INST :
TITLE :

ORIG. PUB. :

ABSTRACT : control. The absence of effect from lx is associated by the author with the harmful effect of chlorine. In recent years (1954-1957), the main attention was devoted to the row placement of fertilizers, organo-mineral mixtures and phosphorite composts. Phosphorus and nitrogen fertilizers in a P90K45 dose in rows gave the crop gains and with joint placement considerably increased the effect of small doses (tons/ hectare) of

CARD: 2/3

APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R000927930007-4

CULTIVATED PLANTS.
ABS. JOUR. REF ZHUR - BIOLOGIYA, NO. 4, 1959,
AUTHOR
INST.
TITLE No. 15648

ORIG. PUB.

ABSTRACT : organic fertilizers. Phosphorite meal, composted with manure in a 1:20 ratio in a 1.25 tons/hectare dose gave approximately tons/hectare larger crop of potatoes than when mixed with manure on the day of placement.
-- V. V. Prokosiev

CARD: 3/3

"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R000927930007-4

KUVSHINOVA, G.P., kand.sel'skokhozyaystvennykh nauk

Methods of applying various fertilizers to corn at the time of planting. Uch. zap. Mord. gos. un. no.13:66-69 '60.
(MIRA 15:11)

1. Kafedra pochvovedeniya i agronomii Mordovskogo gosudarstvennogo universiteta.
(Corn (Maize)--Fertilizers and manures)

APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R000927930007-4"

"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R000927930007-4

KORABITSKIY, N.K., kand.sel'skokhoz.nauk; KUVSHINOVA, [illegible], kand.sel'skokhoz. nauk

Manure-soil composts in the leached Chernozems of the Mordovian A.S.S.R. Zemledelie 25 no.9:67-68 S '63. (MIRA 16:9)

1. Mordovskiy gosudarstvennyy universitet.
(Mordovia—Compost)

APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R000927930007-4"

"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R000927930007-4

SHISHKINA, A.V.; KUVSHINOVA, R.L.

Clinical aspects of craniospinal tumors. Zhur. nevr. i psikh. 61 no.4:501-503 '61. (MIRA 14:7)

1. Klinika nervnykh bolezney (zav. kafedroy - dotsent Ye.N.Kovalev) Ryazanskogo meditsinskogo instituta imeni I.P.Pavlova i oblastnaya bol'nitsa imeni N.A.Semashko (glavnyy vrach B.N.Shirokov).
(NERVOUS SYSTEM--TUMORS)

APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R000927930007-4"

"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R000927930007-4

L 59234-65 EWT(l)/EWT(m)/EPF(c)/EPR/T/EWP(t)/EWP(b)/EWA(h) Pz-6/Pr-4/Pa-4/Peb
IJP(c) JD/JG/AT
ACCESSION NR: AP5015018 UR/0078/65/010/006/1507/1508
546.41'221

AUTHOR: Tananayev, I.V.; Kuvshinova, T.B.

TITLE: Reaction of GaS with gaseous ammonia at high temperatures

SOURCE: Zhurnal neorganicheskoy khimii, v. 10, no. 6, 1965, 1507-1508

TOPIC TAGS: gallium nitride, gallium sulfide, ammonia, semiconductor

ABSTRACT: The emissive properties of the semiconductor gallium nitride (GaN) are determined to a large extent by the temperature at which it is synthesized. In this connection, the authors propose a method for preparing GaN at relatively low temperatures (800 and 900C) by reacting GaS with dry ammonia, the reaction is

$$2GaS + 2NH_3 \longrightarrow 2GaN + 2H_2S + H_2.$$

The products were stable in air at room temperature; at about 1000C, they formed gallium oxide. They did not react with water, hydrochloric or nitric acid, but dissolved on heating in concentrated alkalies and after prolonged boiling in dilute sulfuric acid. In order to make sure that the synthesized compound was gallium nitride, not gallium amide (GaNH), GaN was synthesized by the method of H. Hahn and R. Juza (Z. anorg. Chem., 244, 111, 1940).

Card 1/2

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"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R000927930007-4

L 59234-65

ACCESSION NR: AP5016018

The x-ray diffraction patterns obtained for both products were identical. Orig. art. has: 1 table and 1 formula.

ASSOCIATION: None

SUBMITTED: 19Oct64 ENCL: 00 SUB CODE: IC

NO REF SOV: 000 OTHER: 006

Card 2/2

APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R000927930007-4"

"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R000927930007-4

KUVSHINOVA, V. A.

20-2-26/60

AUTHORS: Korobitsyna, I. K., Zhukova, I. G., Kuvshinova, V. A., Gaydamovich, N. N., Yur'yev, Yu. K.

TITLE: Synthesis and Isomerization of Enol Acetates of β-Furanidons (Sintez i izomerizatsiya enolatsetatov β-furanidonov)

PERIODICAL: Doklady Akademii Nauk SSSR, 1957, Vol. 114, Nr 2, pp. 327-330 (USSR)

ABSTRACT: The derivatives of the enolic form of tetrahydrofuranon-3 (β-furanidon) and of its homologues have hardly been investigated at all. The authors of the paper under review, in order to produce the acetylic derivatives of the enolic form, used such ketones of the β-furanidon series in which only one single methylene group stands in the α-position with respect to the carbonyl group. This made it possible to obtain only one enolic acetate with a position of the double bond that was known in advance. Isopropenylacetate was used as acetylating substance. So far, this type of the interesting β-furanidon derivatives has not been described.

Card 1/3 The authors of the paper under review examined the behavior

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"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R000927930007-4

of these enolic acetates with respect to halogenation and isomerization. At chlorine blowing through 2,2,5,5-tetramethylfuranidon-3-enolacetate, or through its solution in chloroform or absolute ether, there is produced at -5° a monochlorine-ketone of the furanidine series, i.e. 4-chlorine-2,2,5,5-tetramethylfuranidon-3. This reaction is of fundamental importance, but it has no preparational significance. One of the most interesting reactions is the isomerization of the thermal or catalytic enolacetate-ketons into β-diketones. If triborofluoride is let through cooled enolic acetate at -40 to - 20°, no isomerization takes place. At -10 to -5°, on the other hand, after a certain period of induction a turbulent reaction takes place as well as a total resinification of the reaction mixture. If the same enolic acetate is let through a glass tube, which is filled with wadding of glass and heated up to a temperature of 500° (but not below) then anisomerization into 4-acetyl-2,2,5,5-tetramethylfuranidon-3 takes place. At higher temperatures the yield decreases from 36.5 % to 5 - 10 %. As a matter of fact, it is split into a ketone and a ketene. The production of a cupric salt and of the derivatives of the 4-acetyl-2,2,5,5-tetramethyl-

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"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R000927930007-4

20-2-29/60

• Synthesis and Isomerization of Enol Acetates of β-Furanidons

furanidon-3 as well as an intense violet coloring by solution of ferric chloride confirm its structure. The spectrum of absorption of this cupric salt as analogous to the spectrum of absorption of the cupric salt of acetylacetone, which is one of the characteristic β-diketones. The experimental part of the paper under review describes in detail the reactions together with yields, constants and methods. There are 6 references, 2 of which are Soviet.

ASSOCIATION: Moscow State University imeni M. V. Lomonosov (Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova)

PRESENTED: January 16, 1957, by B. A. Kazanskiy, Member of the Academy

SUBMITTED: January 12, 1957

AVAILABLE: Library of Congress

Card 3/3

APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R000927930007-4"

"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R000927930007-4

LEVIN, A.I.; SMIRNOV, V.A.; CHERKASOVA, A.Ya.; KOVSHINOVA, V.I.

Using electronic computers for calculating multicircular urban gas systems. Gaz. prom. 6 no.11:33-34 '61. (MIRA 15:1)
(Gas distribution) (Electronic calculating machines)

APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R000927930007-4"

"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R000927930007-4

KUVSHINOVA, Ye.V.

Production of a specific antiserum against potato virus S. Vop. virus 8 no.2:172-174 Mr-Ap'63 (MIRA 16:12)

Production of antiserum against barley false stripe virus. Ibid.: 174-176

1. Vsesoyuznyy nauchno-issledovatel'skiy institut fitopatologii.

APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R000927930007-4"

"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R000927930007-4

SOCHILOVA, A.A.; BUYANOVSKAYA, I.S.; KENINA, A.Ye.; DMITRIYEVA, V.S., FURER, N.M.; BELYAYEVA, L.A.; KUVSHINOVA, Ye.V., VAKULENKO, N.A.; ZAMUKHOVSKAYA, A.N.; LEONOVA, A.G.

Agar diffusion method for determining the activity of antibiotics.
Trudy VNIIA no.1:10-26 '53. (MLRA 8:1)
(Antibiotics--Testing) (Bacteriology--Culture and culture media)

APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R000927930007-4"

"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R000927930007-4

COUNTRY : USSR
CATEGORY : Plant Diseases. General Problems. 0

ABS. JOUR. : Referat. Zh., No. 23 1958 No. 101962

AUTHOR : Kuvshinova, Ye. V.
INST. : Moscow Agricultural Academy imeni K. A. Timiryazev
TITLE : The Use of Dry Serums in Phytopathology.

ORIG. PUB. : Dokl. Mosk. s.-kh. akad. im. K. A. Timiryazeva, 1957, vyp. 31, 162-166

ABSTRACT : The feasibility of using dry serums in diagnosis of certain bacterial and virus diseases was studied. Prepared and studied were serums specific against Pseudomonas tumefaciens, Xanthomonas vesicatorium and P. syringae, the virus of tobacco mosaic and against X virus of potato. Dilution of anti-bacterial serums was 1:30; dilution of anti-virus ones - 1:8. Serums were diluted with distilled water, physiological solution, 1% glucose, 0.1% gelatine plus 1% glucose. The diluted serums were applied onto photographic film from which emulsion had been washed off.

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"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R000927930007-4

COUNTRY :
CATEGORY : C

ABS. JOUR. : RZhBiol., No. 19[illegible] No. 104,562

AUTHOR :
INST. :
TITLE :

ORIG. PUB. :

ABSTRACT : and dried at room temperature. The activity of the serum was checked once a month. Control consisted of normal serum on the same kind of film and the same liquid serum kept at 4-5°. Serums, both anti-bacterial and anti-virus, diluted in physiological solution and distilled water, preserved their activity for 3-4 months. Serums diluted with 1% glucose solution preserved their activity longer. --G. A. D'yakova

CARD: 2/2

3

APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R000927930007-4"

"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R000927930007-4

KUVSHINSKIY, D.D., general-mayor meditsinskoy sluzhby

Organization of the work of specialists in military and medical institutions. Voen.-med. zhur. no.8:17-21 Ag '61. (MIRA 15:2)
(MEDICINE, MILITARY)

APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R000927930007-4"

"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R000927930007-4

KUVSHINSKIY, D.D., general-mayor meditsinskoy sluzhby

Important problems of the military medical service. Voen.-med. zhur. no.11:3-7 N '61. (MIRA 15:6)
(MEDICINE, MILITARY)

APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R000927930007-4"

"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R000927930007-4

KUVSHINSKIY, D.D., general-leytenant meditsinskoy sluzhby

Improve medical care and increase the combat readiness of the medical serv co. Voen.-med.zhur. no.1:3-8 '65.

(MIRA 18:10)

APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R000927930007-4"

"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R000927930007-4

KUZNETSOV, D.D., general-leytenant meditsinskoy sluzhby.

Some results of the work and problems of military medical service. Voen.-med. zhur. no. 1:3-6 Ja '57. (MIRA 10:1)

APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R000927930007-4"

"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R000927930007-4

4

ACC NR: AP7002308 SOURCE CODE: UR/0133/66/000/006/0128/0128

AUTHOR: Borchaninov, G. S.; Sokolov, N. I.; Vasil'yev, A. A.; Tarasov, V. I.; Grudinskiy, P. G.; Ul'yanov, S. A.; Kuvshinskiy, N. N.; Fedoseyev, A. M.

ORG: none

TITLE: L. N. Baptidanov (Deceased)

SOURCE: IVUZ. Energetika, no. 6, 1966, 128

TOPIC TAGS: electric engineering personnel, academic personnel

ABSTRACT: L. N. Baptidanov died January 13, 1966. His working life was primarily dedicated to training of electrical engineering specialists. Soon after graduating from the Electrical Industrial Faculty of the Moscow Institute of the National Economy, Baptidanov began teaching at the Moscow Power Technical School. In 1934, Baptidanov began teaching at the All Union Correspondence Industrial Institute, then in 1946 he shifted to the All Union Industrial Academy of Machine Building, where he worked in the chair of electrical power stations. He was responsible for the creation of a model electrical station in the electrical stations chair of the Moscow Power Institute. Baptidanov was also very active as an author, writing such works as "Industrial Enterprise Substations", "Electrical Equipment of Electrical Stations and Substations", etc. From 1943 to 1946, Baptidanov worked as the Scientific editor for Electrical engineering at the State Power Literature Publishing House. [JPRS: 37,564]

SUB CODE: 09 / SUBM DATE: none

Card 1/1

APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R000927930007-4"

"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R000927930007-4

POLEYES, Miriam Ezrovna; KUVSHINSKIY, M.N., red.; BALDINA, N.F., tekhn.red.

[Laboratory practice in analytical chemistry] Rukovodstvo k prakticheskim zaniatiiam po analiticheskoi khimii. Moskva, Medgiz, 1962. 71 p. (MIRA 15:4)
(Chemistry, Analytical—Laboratory manuals)

APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R000927930007-4"

"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R000927930007-4

SHILOV, Yu.M.; TARASENKO, M.I.; KUVSHINSKIY, M.N., red.; KOKIN, N.M., tekhn. red.

[General chemistry] Obshchaia khimiia. Moskva, Medgiz, 1963. 367 p. (MIRA 16:12)
(Chemistry--Handbooks, manuals, etc.)

APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R000927930007-4"

"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R000927930007-4

STEPANENKO, Boris Nikoalyevich; KUVSHINSKIY, M.N., red.; MIRONOVA, A.M., tekhn. red.

[Organic chemistry] Organicheskaia khimiia. Izd.3., ispr. i dop. Moskva, Medgiz, 1963. 411 p. (MIRA 16:5)
(Chemistry, Organic)

APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R000927930007-4"

"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R000927930007-4

NEMENOVA, Yu.M.; KRYUCHKOVA, G.M.; LYUBINA, A.Ya.; POLEYES, M.B.; KUVSHINSKIY, M.N., red.

[Manual on the technique of laboratory work] Praktikum po tekhnike laboratornykh rabot. Moskva, Meditsina, 1965. 207 p. (MIRA 18:11)

APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R000927930007-4"

"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R000927930007-4

GRUNDINSKIY, P.G., professor; KUVSHINSKIY, N.N., dotsent, kandidat tekhnicheskikh nauk; SEMENOV, S.N., inzhener; BUGRINOV, Ye.A., inzhener.

Remarks on L.D.Dvoskin's article "New scheme and construction of the distributing system of an electric power station." Elektrichestvo no.6:86-88 Je '54. (MLRA 7:7)

1. Moskovskiy energeticheskiy institut im. Molotova (for Grundinskiy, Kuvshinskiy) 2. Mosenergoproyekt (for Semenov, Bugrinov)
(Dvoskin, L.D.) (Electric power stations)

APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R000927930007-4"

"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R000927930007-4

UGORETS, I.I.; GLAZUNOV, A.A.; SYROMYATNIKOV, I.A.; KASHUNIN, I.S.; POSTNIKOV, N.A.; RADTSIG, V.A.; UL'YANOV, S.A.; GRUDINSKIY, P.G.; VASIL'YEV, A.A.; KUYSHINSKIY, M.N.; BAPTIDANOV, L.N.; TARASOV, V.I.; KRIKUNCHIK, A.B.; SHAPIRO, A.B.; BIBIKOV, V.V.; DVOSHIN, L.I.; KLINGOF, I.D.; KARPOV, M.M.; USPENSKIY, B.S.; CHALIDZE, I.M.; BLOCH, Ya.A.; SHMOTKIN, I.S.

Iosif IAkovlevich Gumin; obituary. Elek.sta.26 no.12:58 D '55.
(Gumin, Iosif IAkovlevich, 1890-1955) (MLRA 9:4)

APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R000927930007-4"

"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R000927930007-4

VINTER, A.V.; NEKRASOV, A.M.; SYROMYATNIKOV, I.A.; VOZNESENSKIY, A.N.; VASILENKO, P.I.; LAUPMAN, P.P.; TERMAN, I.A.; VINOGRADOV, N.P.; ANTOSHIN, N.N.; ALEKSANDROV, B.K.; USPENSKIY, B.[illegible] · KLASSON, I.R.; KHEYFITS, M.E.; DRUTSKIY, V.F.; KRACHKOVSKIY, N.N.; POPOV, P.A.; CHELIDZE, I.M.; FILARETOV, S.N.; KOZLOV, M.D.; BERLIN, V.Ya.; SARADZHEV, A.Kh.; GORDZIYEVICH, I.S.; PAK, V.P.; DORFMAN, S.M.; DUBINSKIY, L.A.; UL'YANOV, S.A.; GRUDINSKIY, P.G.; KUVSHINSKIY, N.N.; ERMOLENKO, V.M.

Mikhail Mikhailovich Karpov. Elek.sta. 27 no.10:62 O '56. (MLRA 9:12)
(Karpov, Mikhail Mikhailovich, d.1956)

APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R000927930007-4"

"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R000927930007-4

KUVSHINSKIĬ, S. V.

Kubeko, P. P., Kuvshinskii, S. V., and [illegible], S. I.

The amorphous state. XIX. Temperature dependence of the viscosity of liquids. J. Tech. Phys. (U.S.S.R.)

Vol. 1[illegible], 19[illegible], pp. 3-9

Abstracted in: Chem. Abs., Vol. [illegible], 13[illegible]

The log of viscosity is plotted [illegible] for very different substances: ethers, alcs., glycerol, org. glasses, [illegible], glass SiO_2, molten salts, molten metals, air. All curves have a similar trend; they are flat for low-melting, steep for high-melting products. In a complete system the viscosity curve of the liquid drops (neg. temp. coeff.) to a viscosity of 10^{-1} [illegible] $\times 10^{-4}$ poises and, at the crit. temp., reverses to the opposite direction (pos. temp. coeff. of viscosity in a gas). It is believed possible to develop a general theory for all liquids.

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KUVSHINSKIY, V.V.

"Milling" (Frezerovanie), MASHGIZ, Sverdlovsk, 1953.

SO: D-70085, 24 Aug 1954.

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"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R000927930007-4

KUVSHINSKIY, Vladimir Vladimirovich; TOLSTOV, M.A., retsenzent; DUGINA, N.A. tekhnicheskiy redaktor.

[Milling machinery] Frezernye stanki. Moskva, Gos.nauchno-tekhn. izd-vo mashinostroitel'noi lit-ry, 1955. 62 p. (Nauchno-populiarnaia biblioteka rabochego stanochnika, no.24) (MLRA 9:1)
(Milling machines)

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"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R000927930007-4

KUVSHINSKIY, Vladimir Vladimirovich; LOSKUTOV, V.V., kandidat tekhnicheskikh nauk, retsenzent; BLANKMAN, M.A., inzhener, redaktor; DUGINA, N.A., tekhnicheskiy redaktor.

[Milling] Frezerovanie. Moskva, Gos. nauchno-tekhnicheskoe izd-vo mashinostroitel'noi lit-ry, 1955.298 p. (MLRA 9:5)
(Milling machinery)

APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R000927930007-4"

"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R000927930007-4

KUVSHINSKIY, V.V., kandidat tekhnicheskikh nauk; SEREBRENNIK, Yu.B., kandidat tekhnicheskikh nauk; SOLONIN, I.S., kandidat tekhnicheskikh nauk; SHARIN, Yu.S., kandidat tekhnicheskikh nauk.

Surface formation and force relationships in large-feed semifinish grinding. Trudy Ural.politekh.inst. no.63:21-36 '56. (MLRA 10:2)

(Surfaces (Technology)) (Grinding and polishing)

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"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R000927930007-4

25(1,2) PHASE I BOOK EXPLOITATION SOV/1552

Kuvshinskiy, Vladimir Vladimirovich

Frezerovaniye (Milling Operations) 2nd ed., rev. and enl. Moscow, Mashgiz, 1958. 408 p. 45,000 copies printed.

Reviewer: V. T. Poluyanov, Engineer; Executive Ed. (Ural-Siberian Division, Mashgiz): L.A. Kon'shina, Engineer; Tech. Ed.: N.A. Dugina.

PURPOSE: The purpose of this book is to raise the qualifications of milling machine operators, and to improve their theoretical knowledge of the fundamentals of milling operations.

COVERAGE: The book deals with the basic principles and theories of milling operation and the tools and machinery used in the Soviet machine industry. The elements of cutting tools and principles of design are explained. Modern milling machines are reviewed and illustrated. The proper use of various types of machinery and the ways and means of increasing

Card 1/8

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Milling Operations SOV/1552

production are dealt with in several chapters. The book recommends material on the subject of milling operations, machinery and accessories, and problems of industrial planning. The chapters dealing with milling of grooves and keyways were written by Engineer G.P. Mostalygin. There are 39 Soviet references.

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Types of milling cutters	16
Geometric shape and the relief angle of teeth of a milling cutter	18
Elements of the cutting regime	25
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Cutting force and power requirements in milling	39
Forces involved in milling operations	41

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PHASE I BOOK EXPLOITATION SOV/3872

Kuvshinskiy, Vladimir Vladimirovich

Frezerovaniye (Milling) 2nd ed., rev. Moscow, Mashgiz, 1959. 72 p. (Series: Nauchno-populyarnaya biblioteka rabochego-stanochnika, vyp. 15) 16,000 copies printed.

Executive Ed. (Ural-Siberian Division, Mashgiz): G.A. Sarafannikova; Tech. Ed.: N.A. Dugina.

PURPOSE: This booklet is intended for milling-machine operators studying to improve their skill.

COVERAGE: The booklet deals with the fundamentals of milling operations, the construction of milling cutters, and the efficient utilization of milling machinery. No personalities are mentioned. There are no references.

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KONDASHEVSKIY, Vladislav Vladimirovich; KUVSHINSKIY, V.V., kand.tekhn. nauk, red.; MARCHENKOV, I.A., tekhn.red.

[Adjustment of automatic devices for controlling dimensions of parts in machining; design of devices and methods of their adjustment] Naladka avtomaticheskikh priborov kontrolia razmerov detalei pri mekhanicheskoi obrabotke; konstruktsii priborov i metody ikh naladki. Moskva, Gos.nauchno-tekhn.izd-vo mashinostroit.lit-ry, 1960. 181 p. (MIRA 14:3)
(Automatic control)

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"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R000927930007-4

KUVSHINSKIY, V.V., dotsent, kand. tekhn. nauk; CHZHAN TSZIN-CHI [Chang Ching-shih], aspirant

Surface roughness and dimensional precision of parts machined with cutters having trimming edges. Trudy Ural. politekh. inst. no.112:56-64 '61. (MIRA 16:7)

(Metal cutting)

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"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R000927930007-4

KUVSHINSKIY, Vladimir Vladimirovich. Prinimal uchastiye SHUNAYEV, B.K., kand. tekhn. nauk, dots.; DRUGINA, N.A., tekhn.red.

[Fundamentals of the automation of technological processes in the machinery industry]Osnovy avtomatizatsii tekhnologicheskikh protsessov v mashinostroenii. Moskva, Mashgiz, 1962. 258 p. (MIRA 16:3)

(Machinery industry) (Automation)

APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R000927930007-4"

"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R000927930007-4

LVOVSHINSKIY, V.V.; ESTRIN, M.A., inzh., red.

[Milling] Frezerovanie. Izd.3., perer. Moskva, Izd-vo "Mashinostroenie," 1964. 61 p. (MIRA 17:7)

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"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R000927930007-4

SPIRIDONOV, A.A.; SAMOYLOV, S.I., prof., retsenzent; KUVSHINSKIY, V.V., kand. tekhn. nauk, red.; GUSTAVOV, M.I., inzh., red.

[Metal-cutting machines with programed control] Metallorezhushchie stanki s programmnym upravleniem. Moskva, Mashinostroenie, 1964. 279 p. (MIRA 17:11)

APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R000927930007-4"

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KUVSHINSKIY, Ya. V.

Ya. V. Kuvshinskiy and Ya. V. Melechina

"Determination of the Molecular Weight of Polymers Formed in Different Stages of the Polymerization; Polymerization of Styrene in the Presence of Quinone," Journal of Physical Chemistry, 24, 199-201, February 1950, Leningrad

ABSTRACT AVAILABLE

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"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R000927930007-4

KUVSHINSKIY, Ye. A., M. I. [illegible], V. A. [illegible] and S. N. [illegible]

"The Strength of Amorphous Bodies, Especially Polymers."

report presented at the Conference on Investigation of Mechanical Properties of Non-Metals, by the Intl. Society of Pure and Applied Physics and the AS USSR, at Leningrad, 19-24 May 1958.
(Vest. Ak Nauk SSSR, 1958, no. 9, pp. 109-111)

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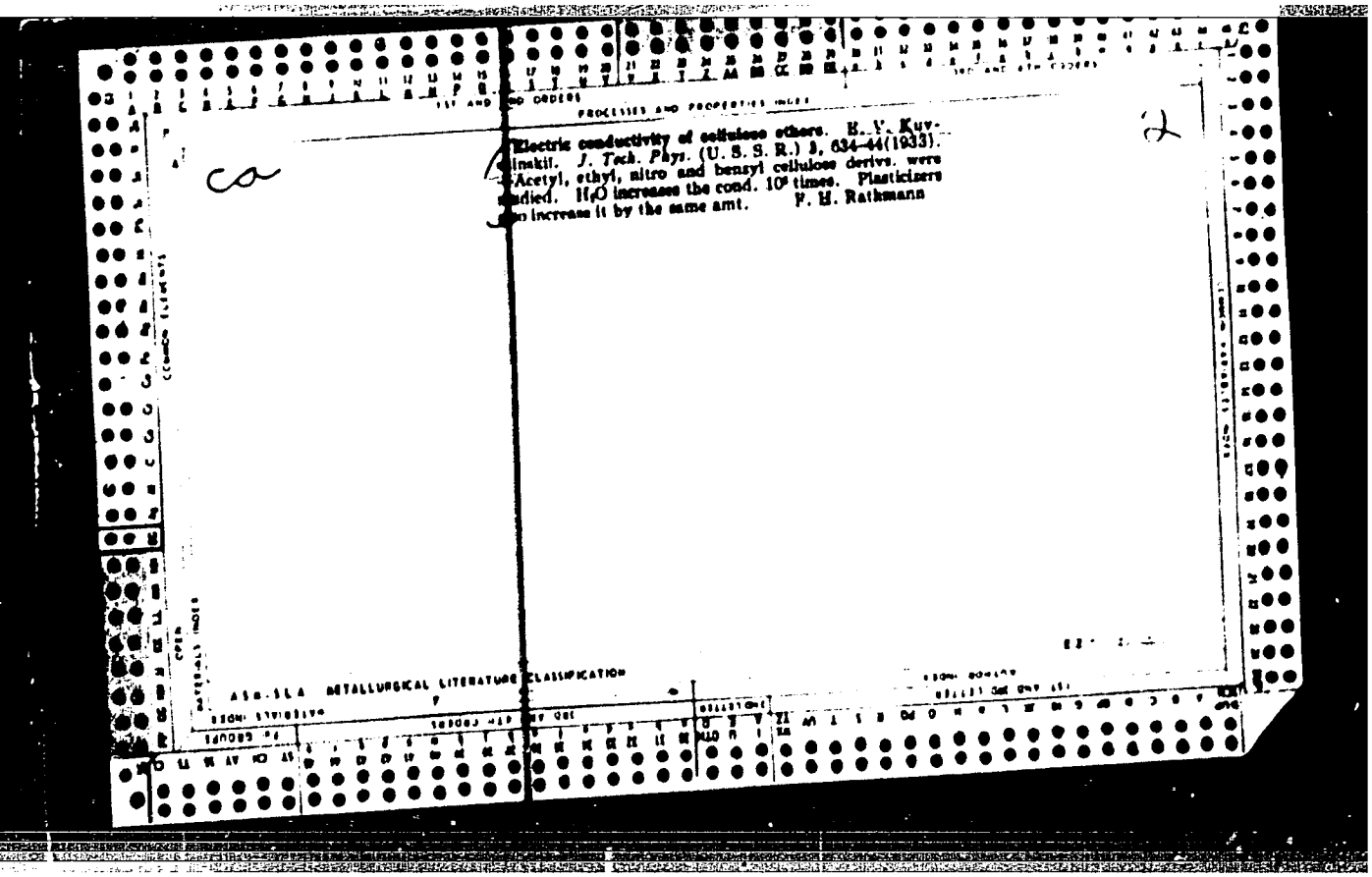

Electric conductivity of cellulose others. K. V. Kuvshinskii. *J. Tech. Phys.* (U. S. S. R.) 3, 634-44(1933). Acetyl, ethyl, nitro and benzyl cellulose derivs. were studied. H_2O increases the cond. 10^9 times. Plasticizers also increase it by the same amt. P. H. Rathmann

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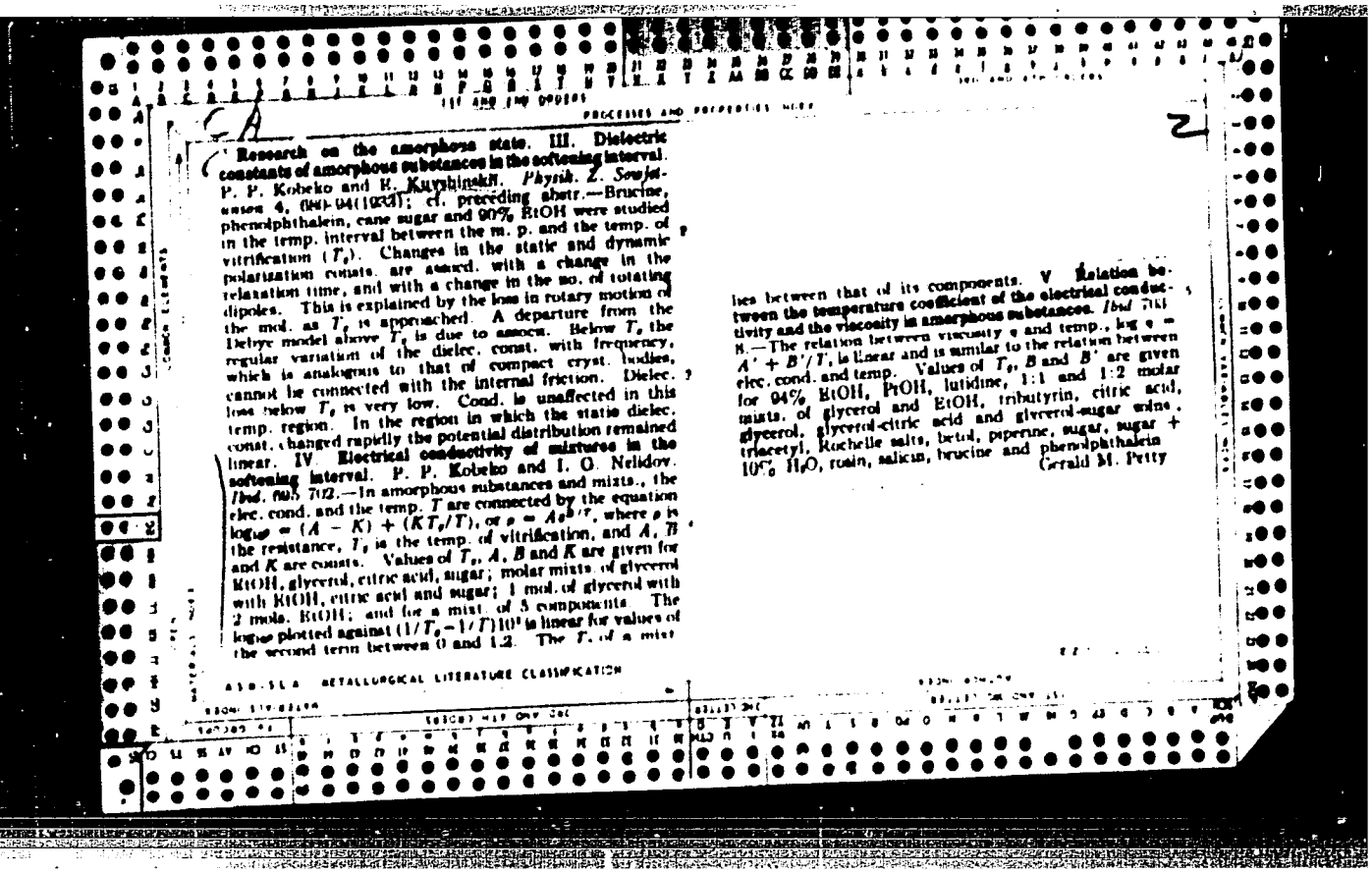

1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

CA

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Research on the amorphous state. III. Dielectric constants of amorphous substances in the softening interval. P. P. Kobeko and E. Kuvshinskii. *Physik. Z. Sowjetunion* 4, 680-94(1933); cf. preceding abstr.—Brucine, phenolphthalein, cane sugar and 90% EtOH were studied in the temp. interval between the m. p. and the temp. of vitrification (T_g). Changes in the static and dynamic polarization consts. are assocd. with a change in the relaxation time, and with a change in the no. of rotating dipoles. This is explained by the loss in rotary motion of the mol. as T_g is approached. A departure from the Debye model above T_g is due to assocn. Below T_g the regular variation of the dielec. const. with frequency, which is analogous to that of compact cryst. bodies, cannot be connected with the internal friction. Dielec. loss below T_g is very low. Cond. is unaffected in this temp. region. In the region in which the static dielec. const. changed rapidly the potential distribution remained linear. **IV. Electrical conductivity of mixtures in the softening interval.** P. P. Kobeko and I. G. Nelidov. *Ibid.* 695-702.—In amorphous substances and mixts., the elec. cond. and the temp. T are connected by the equation $\log_{10}\rho = (A - K) + (KT_g/T)$, or $\rho = Ae^{B/T}$, where ρ is the resistance, T_g is the temp. of vitrification, and A, B and K are consts. Values of T_g, A, B and K are given for EtOH, glycerol, citric acid, sugar; molar mixts. of glycerol with EtOH, citric acid and sugar; 1 mol. of glycerol with 2 mols. EtOH; and for a mixt. of 5 components. The $\log_{10}\rho$ plotted against $(1/T_g - 1/T)10^3$ is linear for values of the second term between 0 and 1.2. The T_g of a mixt. lies between that of its components. **V. Relation between the temperature coefficient of the electrical conductivity and the viscosity in amorphous substances.** *Ibid.* 703-8.—The relation between viscosity η and temp., $\log \eta = A' + B'/T$, is linear and is similar to the relation between elec. cond. and temp. Values of T_g, B and B' are given for 94% EtOH, PrOH, lutidine, 1:1 and 1:2 molar mixts. of glycerol and EtOH, tributyrin, citric acid, glycerol, glycerol-citric acid and glycerol-sugar solns., triacetyl, Rochelle salts, betol, piperine, sugar, sugar + 10% H_2O, rosin, salicin, brucine and phenolphthalein.

Gerald M. Petty

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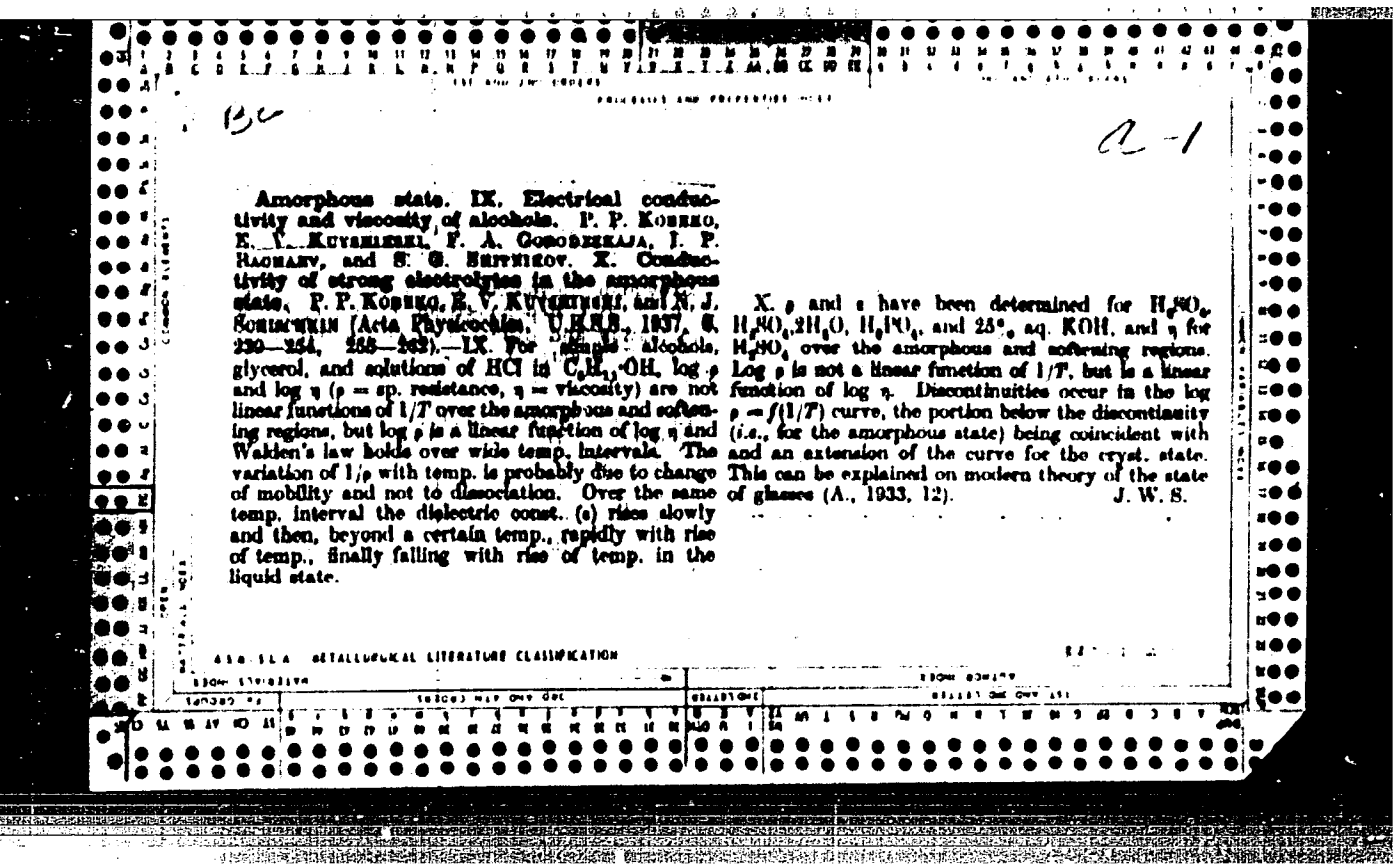

BC

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Amorphous state. IX. Electrical conductivity and viscosity of alcohols. P. P. Kobeko, E. V. Kuvshinski, F. A. Gorodetskaja, I. P. Bachaev, and S. G. Shitnikov. **X. Conductivity of strong electrolytes in the amorphous state.** P. P. Kobeko, E. V. Kuvshinski, and N. J. Schischkin (Acta Physicochim. U.R.S.S., 1937, 6, 239—254, 255—262).—IX. For simple alcohols, glycerol, and solutions of HCl in $C_6H_{11}OH$, log ρ and log η (ρ = sp. resistance, η = viscosity) are not linear functions of $1/T$ over the amorphous and softening regions, but log ρ is a linear function of log η and Walden's law holds over wide temp. intervals. The variation of $1/\rho$ with temp. is probably due to change of mobility and not to dissociation. Over the same temp. interval the dielectric const. (ϵ) rises slowly and then, beyond a certain temp., rapidly with rise of temp., finally falling with rise of temp. in the liquid state.

X. ρ and ϵ have been determined for H_2SO_4, $H_2SO_4.2H_2O$, H_3PO_4, and 25% aq. KOH, and η for H_2SO_4 over the amorphous and softening regions. Log ρ is not a linear function of $1/T$, but is a linear function of log η. Discontinuities occur in the log $\rho = f(1/T)$ curve, the portion below the discontinuity (*i.e.*, for the amorphous state) being coincident with and an extension of the curve for the cryst. state. This can be explained on modern theory of the state of glasses (A., 1933, 12). J. W. S.

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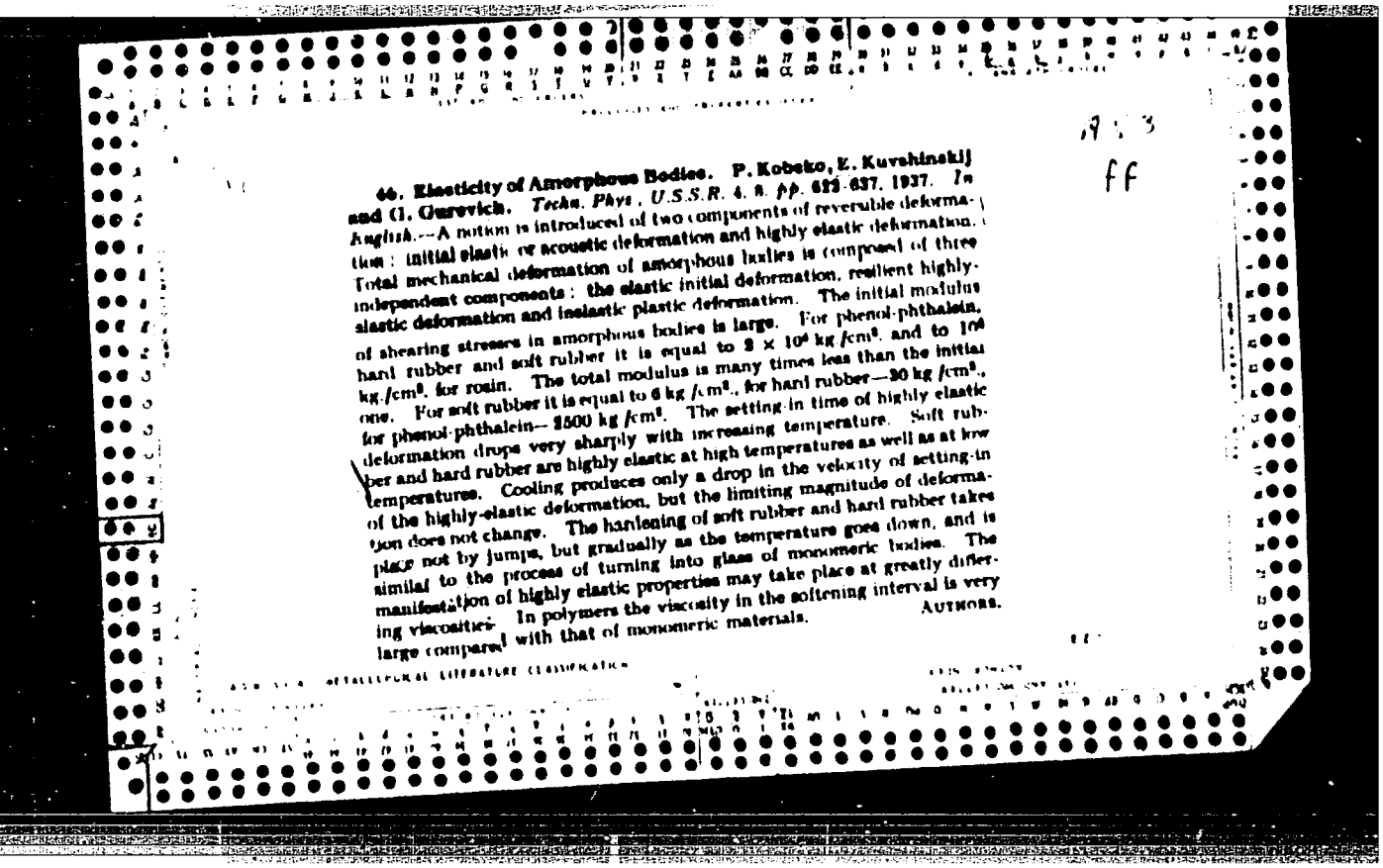

46. **Elasticity of Amorphous Bodies.** P. Kobeko, E. Kuvshinskij and I. Gurevich. *Techn. Phys. U.S.S.R.* 4. 6. pp. 623-637. 1937. *In English.*—A notion is introduced of two components of reversible deformation: initial elastic or acoustic deformation and highly elastic deformation. Total mechanical deformation of amorphous bodies is composed of three independent components: the elastic initial deformation, resilient highly-elastic deformation and inelastic plastic deformation. The initial modulus of shearing stresses in amorphous bodies is large. For phenol-phthalein, hard rubber and soft rubber it is equal to 2×10^4 kg/cm^2, and to 10^4 kg/cm^2, for rosin. The total modulus is many times less than the initial one. For soft rubber it is equal to 6 kg/cm^2, for hard rubber—30 kg/cm^2, for phenol-phthalein—1500 kg/cm^2. The setting-in time of highly elastic deformation drops very sharply with increasing temperature. Soft rubber and hard rubber are highly elastic at high temperatures as well as at low temperatures. Cooling produces only a drop in the velocity of setting-in of the highly-elastic deformation, but the limiting magnitude of deformation does not change. The hardening of soft rubber and hard rubber takes place not by jumps, but gradually as the temperature goes down, and is similar to the process of turning into glass of monomeric bodies. The manifestation of highly elastic properties may take place at greatly differing viscosities. In polymers the viscosity in the softening interval is very large compared with that of monomeric materials. AUTHORS.

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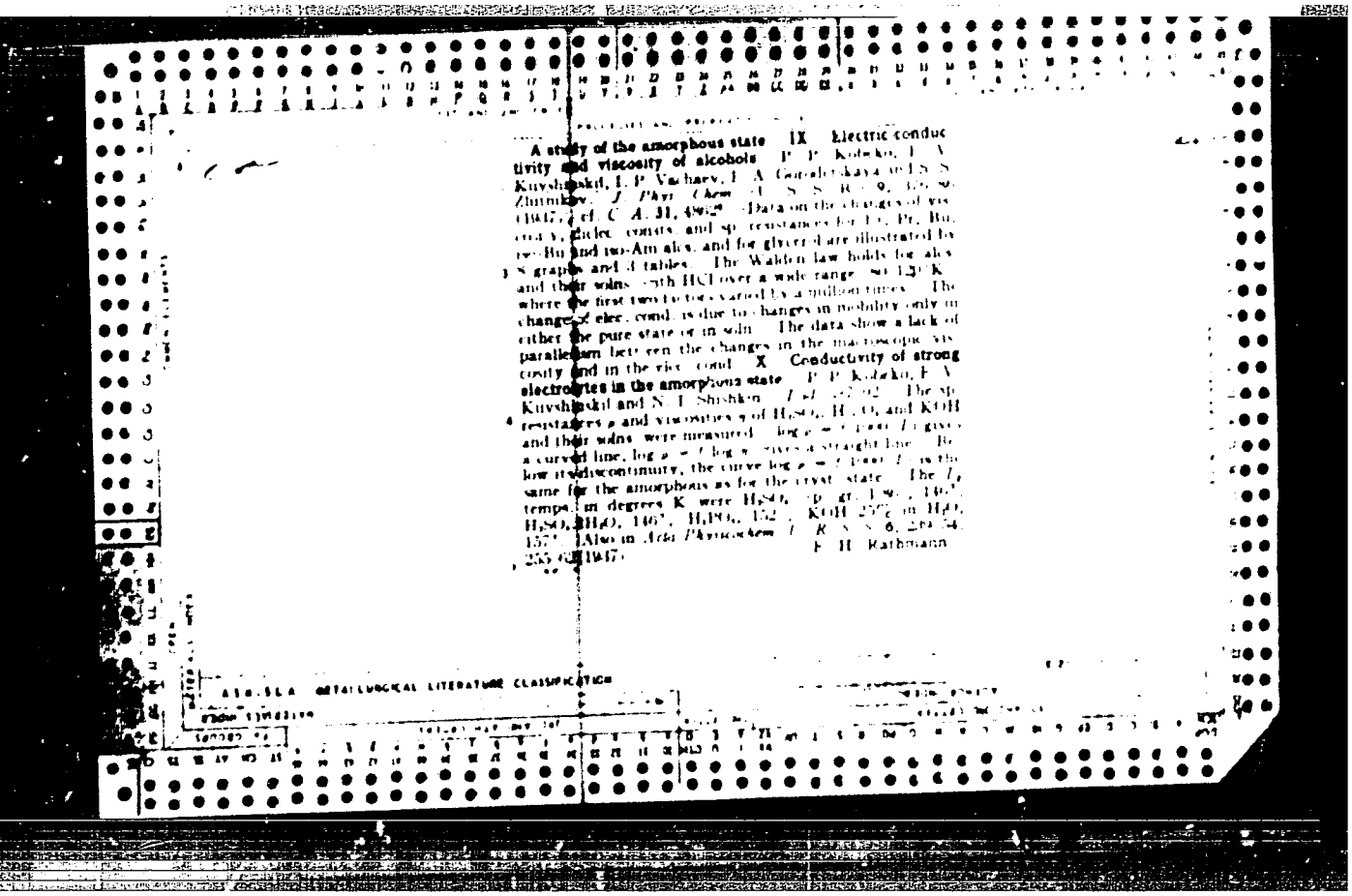

A study of the amorphous state IX Electric conductivity and viscosity of alcohols P. P. Kobeko, F. V. Kuvshinskii, I. P. Vachaev, I. A. Gorodetskaya and S. S. Zhitnikov. *J. Phys. Chem.* (U. S. S. R.) 9, 376-80 (1947); cf. *C. A.* 31, 4962. Data on the changes of viscosity, dielec. consts. and sp. resistances for Et, Pr, Bu, iso-Bu and iso-Am alcs. and for glycerol are illustrated by 8 graphs and 3 tables. The Walden law holds for alcs. and their solns. with HCl over a wide range, 80-120°K, where the first two factors varied by a million times. The change of elec. cond. is due to changes in mobility only in either the pure state or in soln. The data show a lack of parallelism between the changes in the macroscopic viscosity and in the elec. cond. **X Conductivity of strong electrolytes in the amorphous state** P. P. Kobeko, F. V. Kuvshinskii and N. I. Shishkin. *J. Phys.* 12, 92. The sp. resistances ρ and viscosities η of H_2SO_4, H_2O, and KOH and their solns. were measured. $\log \rho = f(1000/T)$ gives a curved line, $\log \rho = f \log \eta$ gives a straight line. Below its discontinuity, the curve $\log \rho = f(1000/T)$ is the same for the amorphous as for the cryst. state. The T_g temps. in degrees K were H_2SO_4 (sp. gr. 1.8[illegible]), 146°, H_2SO_4, H_2O, 146°, H_3PO_4, 152°, KOH 25% in H_2O, 157°. (Also in *Acta Physicochem. U. R. S. S.* 6, 2[illegible]-54, 255-62 (1947).)

F. H. Rathmann

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1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

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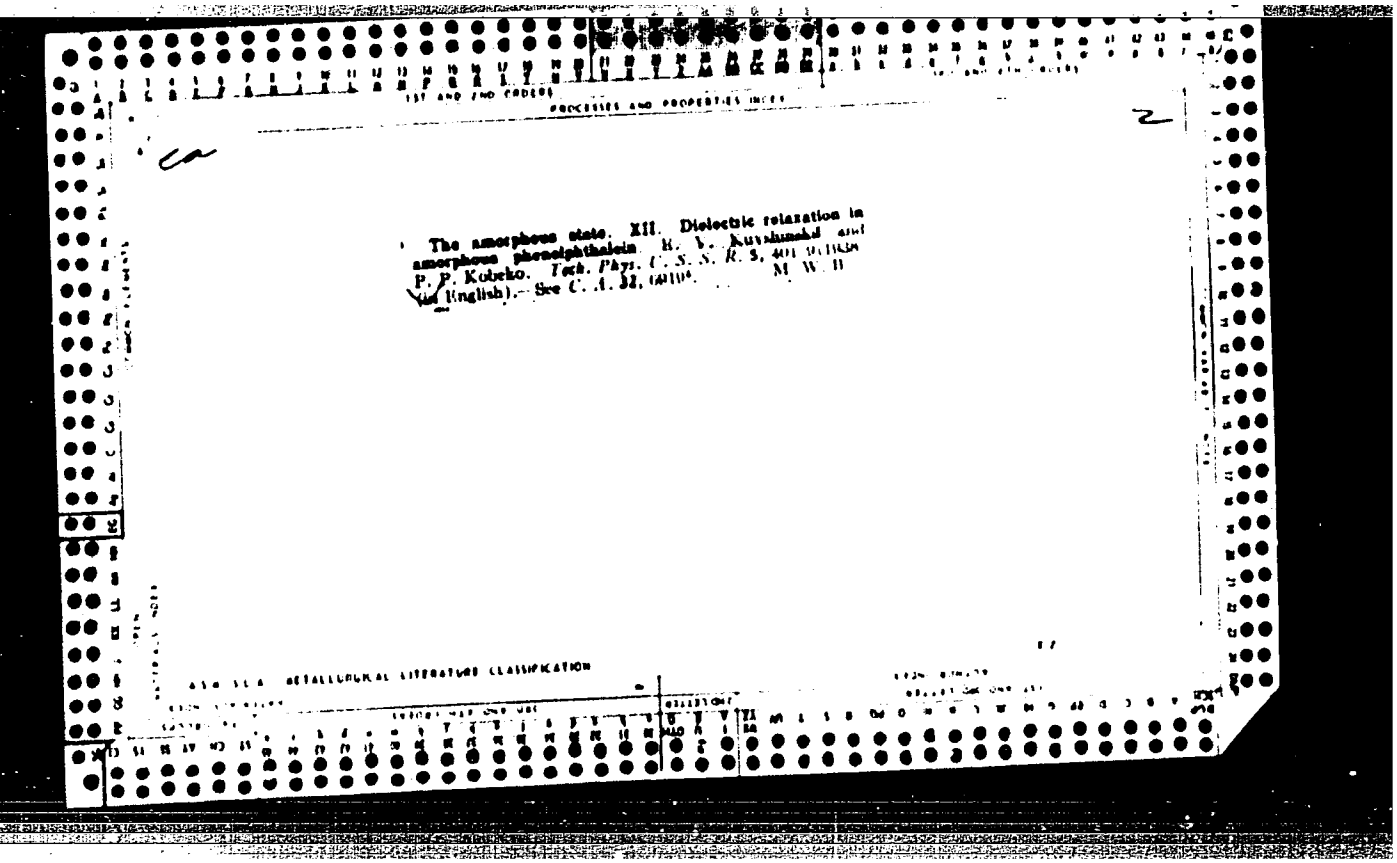

The amorphous state. XII. Dielectric relaxation in amorphous phenolphthalein. R. V. Kuvshinskii and P. P. Kobeko. *Tech. Phys. U. S. S. R.* 5, 401 [illegible] (in English).—See *C. A.* 32, [illegible]. M. W. B.

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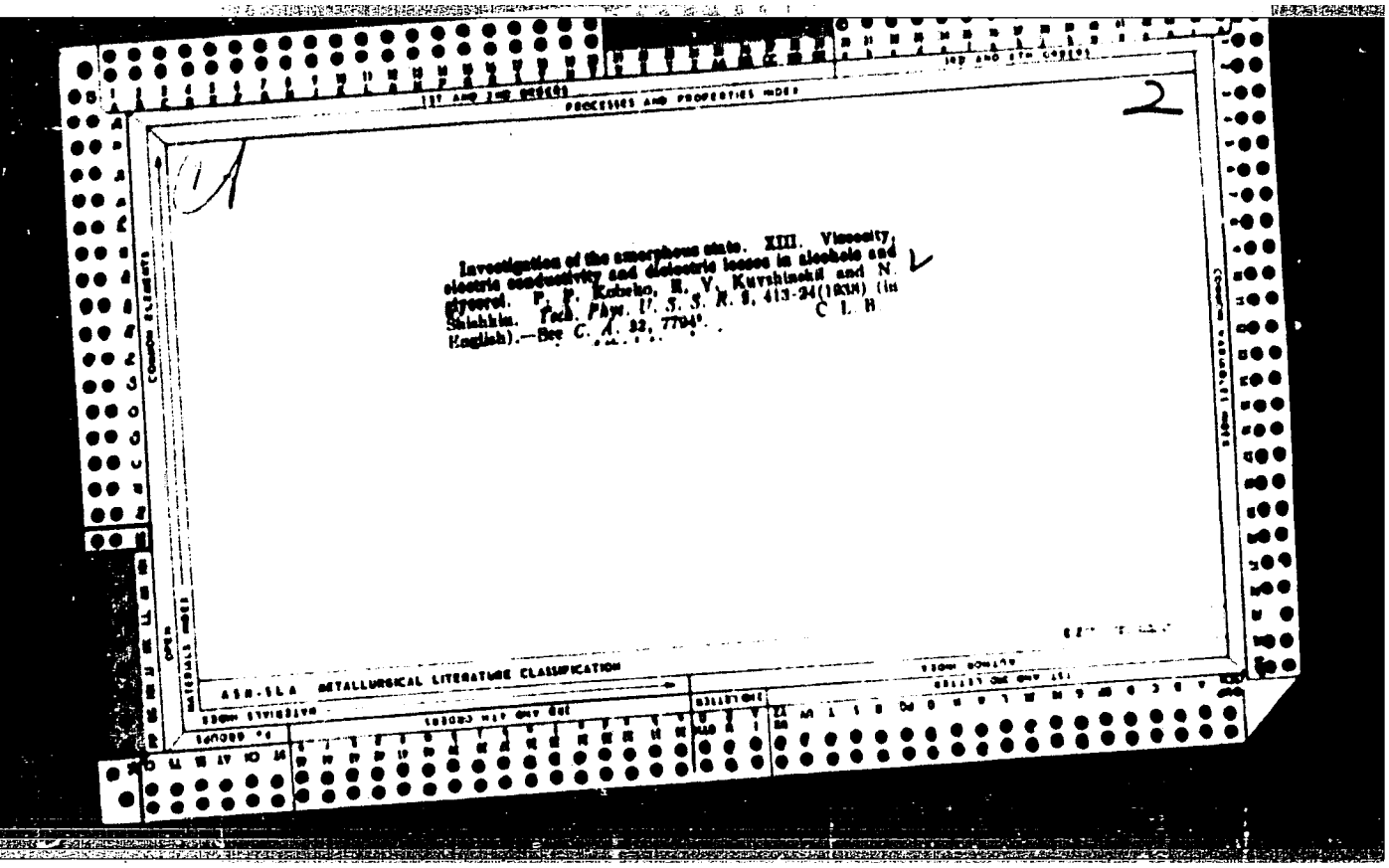

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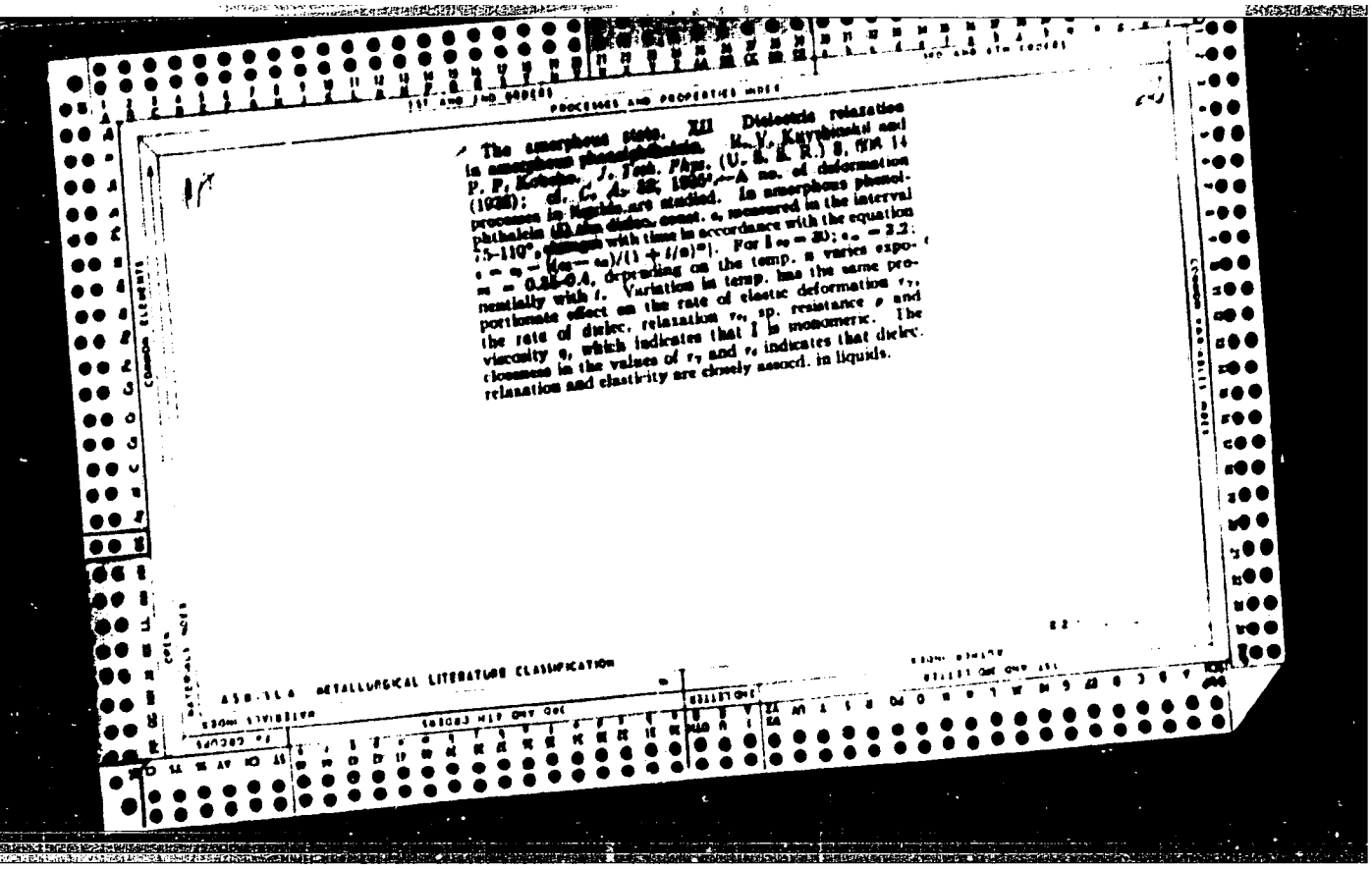
PROCESSES AND PROPERTIES INDEX



The amorphous state. XII Dielectric relaxation in amorphous phenolphthalein. R. V. Kuyshinskii and P. P. Kobeko. J. Tech. Phys. (U. S. S. R.) 8, 608-14 (1938); cf. C. A. 32, 1995[1].—A no. of deformation processes in liquids are studied. In amorphous phenolphthalein (I) the dielec. const. ϵ, measured in the interval 75-110°, changes with time in accordance with the equation $\epsilon = \epsilon_0 - [(\epsilon_0 - \epsilon_\infty)/(1 + t/n)^m]$. For I $\epsilon_0 = 30$; $\epsilon_\infty = 3.2$; $m = 0.35$-0.4, depending on the temp. n varies exponentially with t. Variation in temp. has the same proportionate effect on the rate of elastic deformation τ_γ, the rate of dielec. relaxation τ_ϵ, sp. resistance ρ and viscosity η, which indicates that I is monomeric. The closeness in the values of τ_γ and τ_ϵ indicates that dielec. relaxation and elasticity are closely assocd. in liquids.

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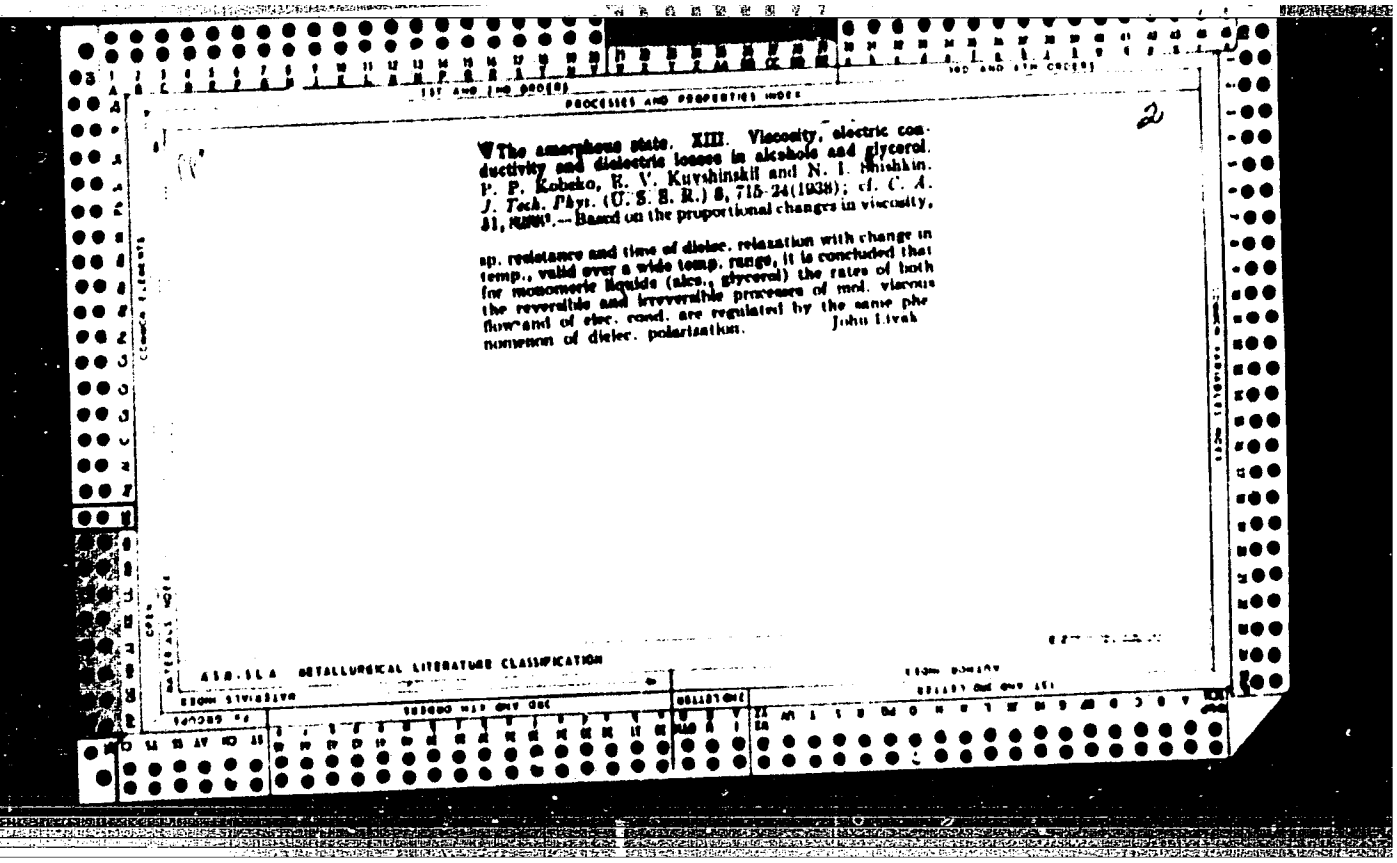
1ST AND 2ND ORDERS



PROCESSES AND PROPERTIES INDEX

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The amorphous state. XIII. Viscosity, electric conductivity and dielectric losses in alcohols and glycerol. P. P. Kobeko, E. V. Kuvshinskii and N. I. Shishkin. *J. Tech. Phys.* (U. S. S. R.) 8, 715-24(1938); cf. *C. A.* 31, [illegible].—Based on the proportional changes in viscosity, sp. resistance and time of dielec. relaxation with change in temp., valid over a wide temp. range, it is concluded that for monomeric liquids (alcs., glycerol) the rates of both the reversible and irreversible processes of mol. viscous flow and of elec. cond. are regulated by the same phenomenon of dielec. polarization. John Livak

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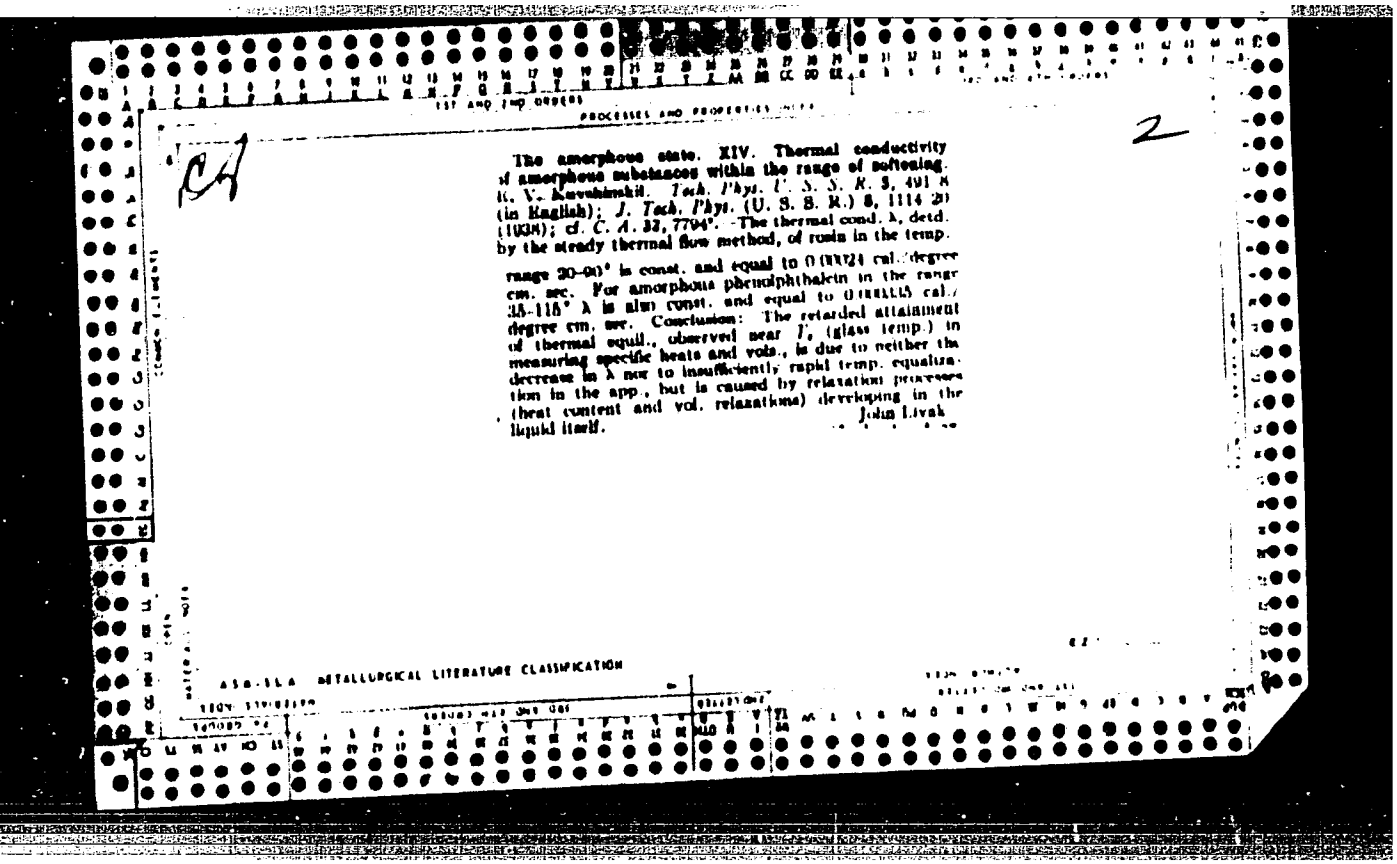

CA

2

The amorphous state. XIV. Thermal conductivity of amorphous substances within the range of softening. K. V. Kavokinskii. *Tech. Phys. U. S. S. R.* 3, 491-8 (in English); *J. Tech. Phys.* (U. S. S. R.) 6, 1114-23 (1936); *cf. C. A.* 32, 7794°. The thermal cond. λ, detd. by the steady thermal flow method, of rosin in the temp. range 20-60° is const. and equal to 0.000324 cal./degree cm. sec. For amorphous phenolphthalein in the range 35-115° λ is also const. and equal to 0.000445 cal./degree cm. sec. Conclusion: The retarded attainment of thermal equil., observed near T_g (glass temp.) in measuring specific heats and vols., is due to neither the decrease in λ nor to insufficiently rapid temp. equalization in the app., but is caused by relaxation processes (heat content and vol. relaxations) developing in the liquid itself. John Livak

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

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KUVSCHINSKI, E. N.

AMORPHOUS STATE. XVIII. ELECTRICAL CONDUCTIVITY OF SUBSTANCES IN THE AMORPHOUS AND CRYSTALLINE STATES. P. P. Kobeko, E. N. Kuvschinski, and N. I. Sobischkin (J. Physics U.S.S.R., 1940, 3, 267-296). -- The variation of sp. resistance (ρ) with temp. (T) of borax, Rochelle salt, and LiOAc has been determined for the substances in the amorphous and cryst. states. For the melts of these substances the portion of the function $\log \rho = f(1/T)$ is not linear. For substances in the vitreous state, i.e., considerably supercooled liquid, the relation is linear at low temp. The coeff. B in the expression $\log \rho = A + B/T$ is almost the same for the above substances in the cryst. and vitreous states. The connexion between these results and X-ray structure is considered, and it is shown that Zachariasen's view (A., 1933, 12, 1107), that the arrangement of mols. in the lattices of silicate and borate glasses is the same as in the cryst. state, may be extended to all supercooled systems irrespective of their composition. Since B does not alter, any considerable change of the structure of a liquid with temp. is not possible.

Immediate source clipping A. J. M.

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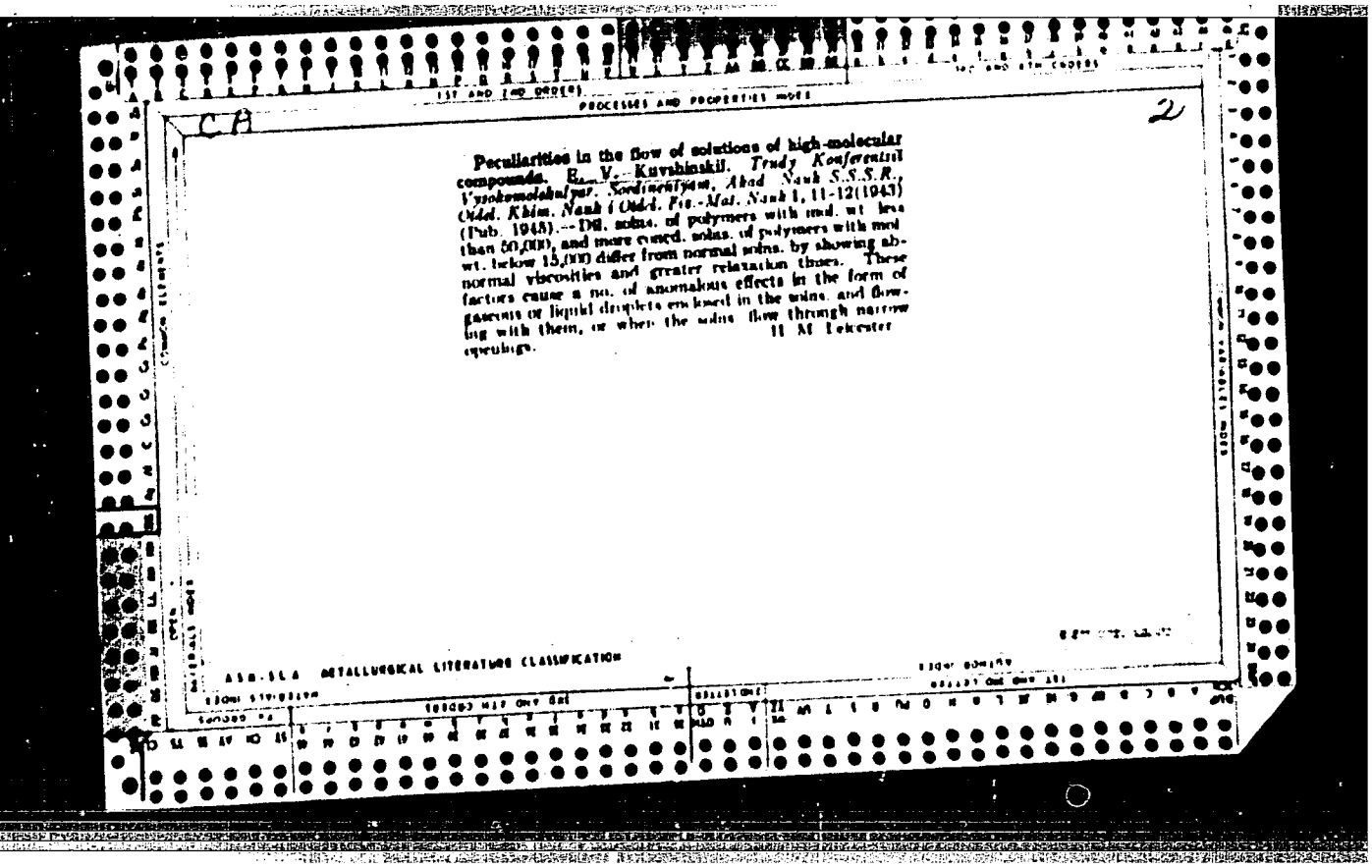

Peculiarities in the flow of solutions of high-molecular compounds. E. V. Kuvshinskii. *Trudy Konferentsii Vysokomolekul'nyr. Soedinenii'yam, Akad Nauk S.S.S.R., Otdel. Khim. Nauk i Otdel. Fiz.-Mat. Nauk* 1, 11-12(1943) (Pub. 1945).--Dil. solns. of polymers with mol. wt less than 50,000, and more concd. solns. of polymers with mol wt. below 15,000 differ from normal solns. by showing abnormal viscosities and greater relaxation times. These factors cause a no. of anomalous effects in the form of gaseous or liquid droplets enclosed in the solns. and flowing with them, or when the solns flow through narrow openings.
H M Leicester

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1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

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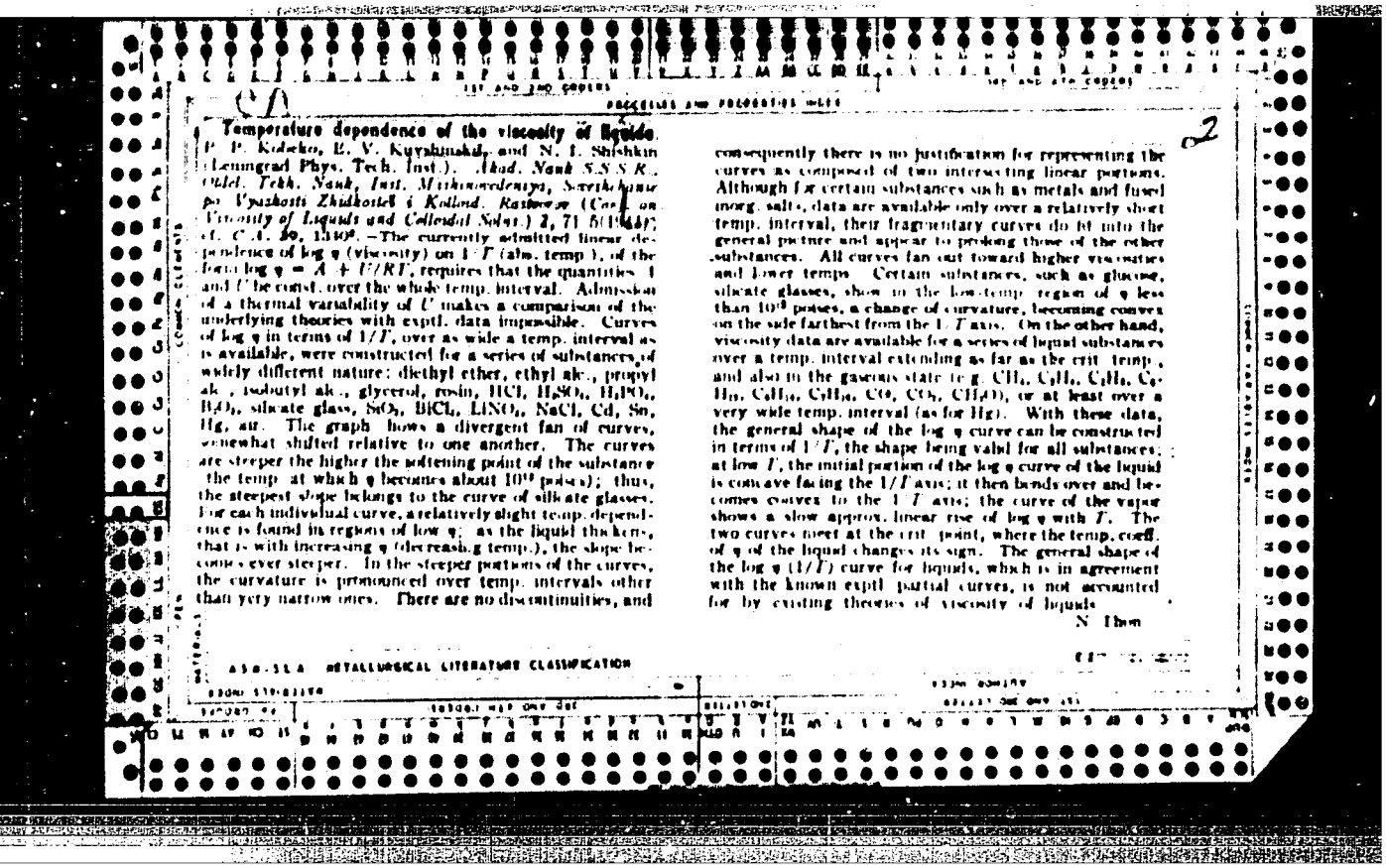

Temperature dependence of the viscosity of liquids. P. P. Kobeko, E. V. Kuvshinskii, and N. I. Shishkin (Leningrad Phys. Tech. Inst.). *Akad. Nauk S.S.S.R., Otdel. Tekh. Nauk, Inst. Mashinovedeniya, Soveshchanie po Vyazkosti Zhidkostei i Kolloid. Rastvorov* (Conf. on Viscosity of Liquids and Colloidal Solns.) 2, 71-5(1944); cf. C.A. 39, 1340[8]. —The currently admitted linear dependence of log η (viscosity) on $1/T$ (abs. temp.), of the form $\log \eta = A + U/RT$, requires that the quantities A and U be const. over the whole temp. interval. Admission of a thermal variability of U makes a comparison of the underlying theories with exptl. data impossible. Curves of log η in terms of $1/T$, over as wide a temp. interval as is available, were constructed for a series of substances of widely different nature: diethyl ether, ethyl alc., propyl alc., isobutyl alc., glycerol, rosin, HCl, H_2SO_4, H_3PO_4, B_2O_3, silicate glass, SiO_2, $BiCl_3$, $LiNO_3$, NaCl, Cd, Sn, Hg, air. The graph shows a divergent fan of curves, somewhat shifted relative to one another. The curves are steeper the higher the softening point of the substance (the temp. at which η becomes about 10^{13} poises); thus, the steepest slope belongs to the curve of silicate glasses. For each individual curve, a relatively slight temp. dependence is found in regions of low η; as the liquid thickens, that is with increasing η (decreasing temp.), the slope becomes ever steeper. In the steeper portions of the curves, the curvature is pronounced over temp. intervals other than very narrow ones. There are no discontinuities, and consequently there is no justification for representing the curves as composed of two intersecting linear portions. Although for certain substances such as metals and fused inorg. salts, data are available only over a relatively short temp. interval, their fragmentary curves do fit into the general picture and appear to prolong those of the other substances. All curves fan out toward higher viscosities and lower temps. Certain substances, such as glucose, silicate glasses, show in the low-temp. region of η less than 10^{13} poises, a change of curvature, becoming convex on the side farthest from the $1/T$ axis. On the other hand, viscosity data are available for a series of liquid substances over a temp. interval extending as far as the crit. temp., and also in the gaseous state (e.g. CH_4, C_2H_4, C_2H_6, C_6H_{12}, C_6H_{14}, C_7H_{16}, CO, CO_2, CH_3OH), or at least over a very wide temp. interval (as for Hg). With these data, the general shape of the log η curve can be constructed in terms of $1/T$, the shape being valid for all substances; at low T, the initial portion of the log η curve of the liquid is concave facing the $1/T$ axis; it then bends over and becomes convex to the $1/T$ axis; the curve of the vapor shows a slow approx. linear rise of log η with T. The two curves meet at the crit. point, where the temp. coeff. of η of the liquid changes its sign. The general shape of the log η ($1/T$) curve for liquids, which is in agreement with the known exptl. partial curves, is not accounted for by existing theories of viscosity of liquids.

N. Thon

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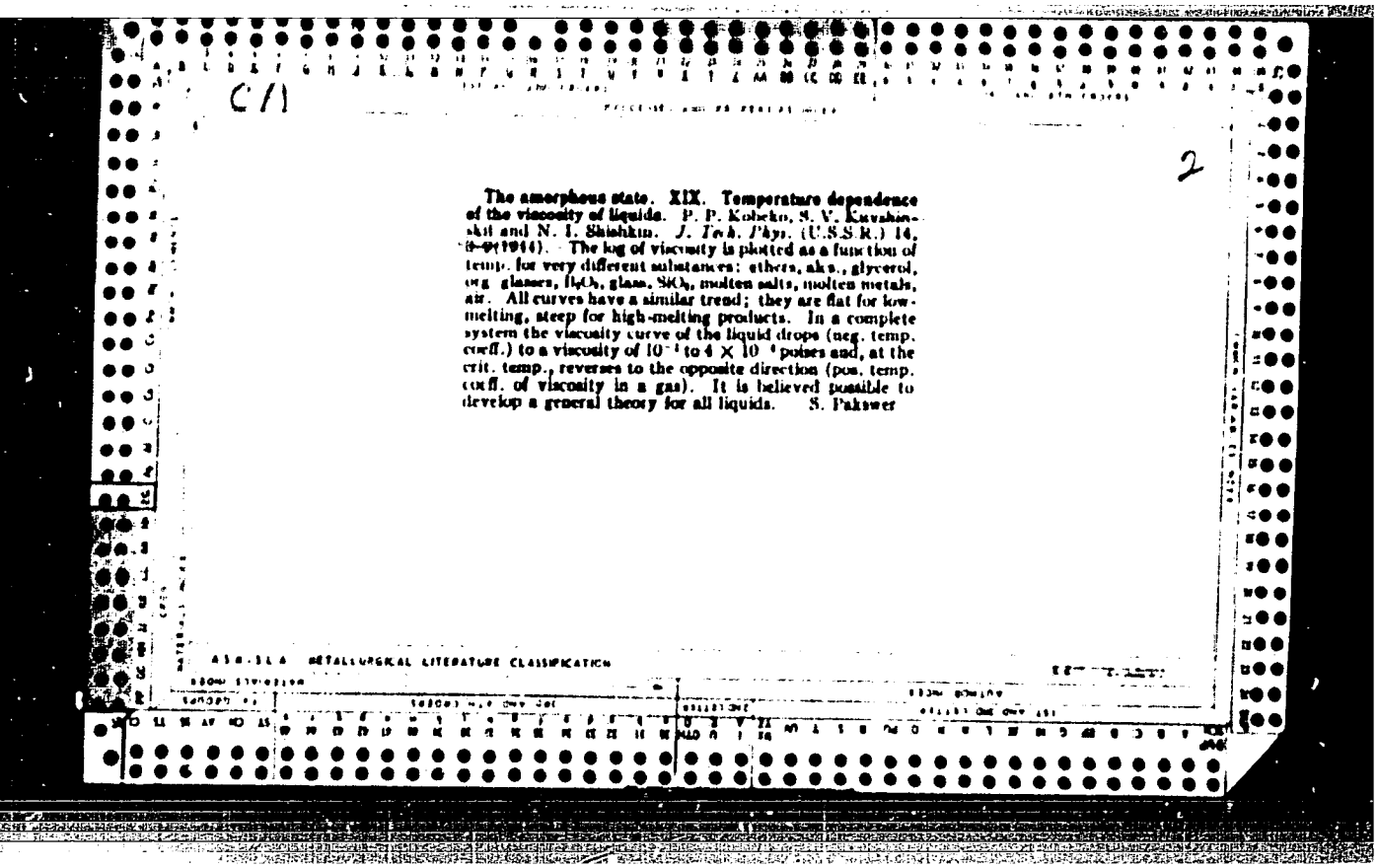

C/1

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The amorphous state. XIX. Temperature dependence of the viscosity of liquids. P. P. Kobeko, S. V. Kuvshinskii and N. I. Shishkin. *J. Tech. Phys.* (U.S.S.R.) 14, 8-9(1944). The log of viscosity is plotted as a function of temp. for very different substances: ethers, alks., glycerol, org. glasses, BeO_3, glass, SiO_2, molten salts, molten metals, air. All curves have a similar trend; they are flat for low-melting, steep for high-melting products. In a complete system the viscosity curve of the liquid drops (neg. temp. coeff.) to a viscosity of 10^{-1} to 4×10^{-4} poises and, at the crit. temp., reverses to the opposite direction (pos. temp. coeff. of viscosity in a gas). It is believed possible to develop a general theory for all liquids. S. Paknser

METALLURGICAL LITERATURE CLASSIFICATION

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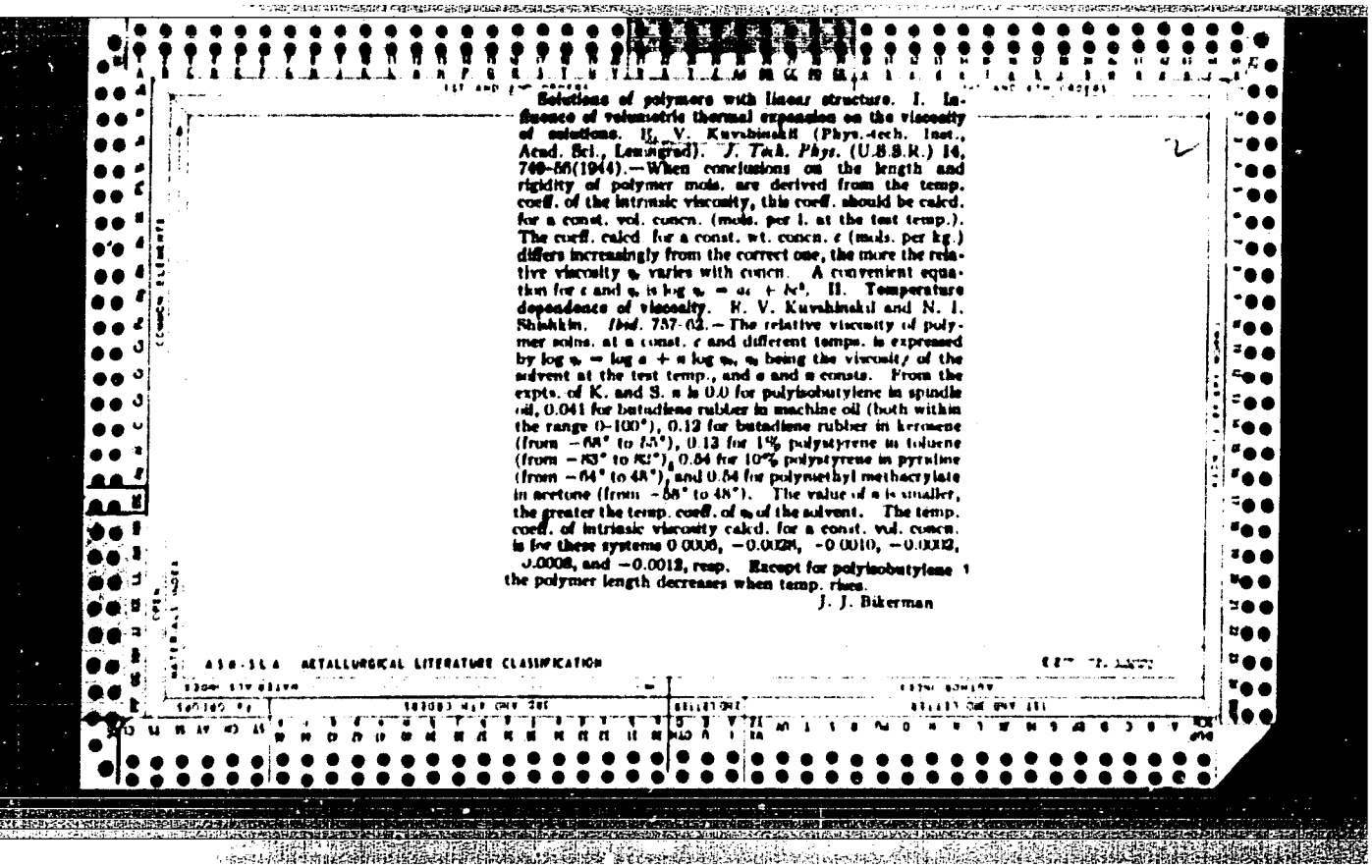

Solutions of polymers with linear structure. I. Influence of volumetric thermal expansion on the viscosity of solutions. II. V. Kuvshinskii (Phys.-tech. Inst., Acad. Sci., Leningrad). *J. Tech. Phys.* (U.S.S.R.) 14, 709-56(1944).—When conclusions on the length and rigidity of polymer mols. are derived from the temp. coeff. of the intrinsic viscosity, this coeff. should be calcd. for a const. vol. concn. (mols. per l. at the test temp.). The coeff. calcd. for a const. wt. concn. c (mols. per kg.) differs increasingly from the correct one, the more the relative viscosity η_r varies with concn. A convenient equation for c and η_r is $\log \eta_r = \alpha c + \beta c^2$. **II. Temperature dependence of viscosity.** K. V. Kuvshinskii and N. I. Shishkin. *Ibid.* 757-62.—The relative viscosity of polymer solns. at a const. c and different temps. is expressed by $\log \eta_r = \log a + n \log \eta_0$, η_0 being the viscosity of the solvent at the test temp., and a and n consts. From the expts. of K. and S. n is 0.0 for polyisobutylene in spindle oil, 0.041 for butadiene rubber in machine oil (both within the range 0–100°), 0.12 for butadiene rubber in kerosene (from −68° to 55°), 0.13 for 1% polystyrene in toluene (from −83° to 82°), 0.84 for 10% polystyrene in pyridine (from −64° to 48°), and 0.84 for polymethyl methacrylate in acetone (from −58° to 48°). The value of n is smaller, the greater the temp. coeff. of η_0 of the solvent. The temp. coeff. of intrinsic viscosity calcd. for a const. vol. concn. is for these systems 0.0006, −0.0028, −0.0010, −0.0012, −0.0008, and −0.0012, resp. Except for polyisobutylene the polymer length decreases when temp. rises.

J. J. Bikerman

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35. Synth. Rub. & Allied Prod.

S.C.L

Peculiarities in the flow of solutions of high-molecular compounds. I. V. KUVSHINSKIY (Trudy Konferentsii Vysokomolekulyar. Soedineniyam, Akad. Nauk S.S.S.R., Otdel. Khim. Nauk i Otdel. Fiz. Mat. Nauk, 1943, pub. 1945, 1, 11-12; Chem. Abs., 1946, 40, 266). Dilute solutions of polymers with molecular weight less than 50,000, and more concentrated solutions of polymers with molecular weight below 15,000, differ from normal solutions by showing abnormal viscosities and greater relaxation times. These factors cause anomalous effects in the form of gaseous or liquid droplets enclosed in the solutions and flowing with them, or when the solutions flow through narrow opening.

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C. A.

Theory of the evaporation of a liquid in a closed vessel. H. V. Kuvshinskii (Leningrad Phys. Tech. Inst.). *Zhur. Tekh. Fiz.* 17, 1353–8(1947).—The solution of the one-dimensional problem of evapn. in an infinite cylindrical vessel, against a column of gas exerting a pressure on the liquid at the bottom, is applicable to the initial stage of evapn. in a vessel of finite height. The solution permits calcn. of the max. possible cooling of the liquid surface.
N. Thon

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C. A.
1951

General and Physical Chemistry
2.

Evaporation of liquids in closed vessels II V. A Ioffe, V. Kuvshinskii, and N. M. Belnov. *J. Tech. Phys. U.S.S.R.* 18, 341-4 (1948). —An equation was deduced for the evapn. of a liquid from the bottom of a vertical cylindrical tube originally filled with pure gas. The pressure increased in the 1st stages according to the equation $\Delta B = B - B_0 = 2.5\alpha B\sqrt{Dt/V}$, where B is the pressure in atm., at beginning of evapn., D is the diffusion coeff. in sq. cm. per sec., t is the time in sec., S is the cross-section of tube in sq. cm. and V is the vol. of tube in cc. This equation is tested for evapn of benzene in air in a closed vessel, and for CCl_4 in NF_3. The app. is described and in both cases the evapn follows the above equation closely in the initial stages. H A

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Empirical relations between the diffusion coefficients of vapors in different gases. H. V. Kavetskaia. *Zhur. Tekh. Fiz.* 18, 909–14(1948).—The formula for the diffusion coeff. of a gas x in a gas y, $D_{xy} = B\sqrt{(1/M_x) + (1/M_y)}\,T^{3/2}/(V_x^{1/3} + V_y^{1/3})^2 P$ (where M = mol. wt., V = mol. vol.), simplified from the gas-kinetic theoretical formula, gives the relatively best agreement with exptl. data with $B = 0.0043$, but even so deviations attain 20–30%. If B is given its theoretical value, it is necessary to assume that the kinetic radii r are by 50–100% greater than the radii calcd. from V. An additivity formula of the type $(r_x + r_y) = (r_x + r_z) + A$, with A independent of the nature of x, is confirmed by data for about 40 org. vapors (x) in the pairs y = CO_2, z = air; y = CO_2, z = H_2, and y = H_2, z = air. The sums of the kinetic r of the same pair of substances in different gases differ, with few exceptions, only by a const. Further empirical relations are $D_{x2} = 0.583 + 0.65\,D_{x1}$, $D_{x1} = 0.175\,D_{x3}$, and $D_{x2} = 0.003 + D_{x3}$, where subscripts 1, 2, and 3 refer to CO_2, air, and H_2, resp. These relations permit, for example, the calcn. of D of CCl_4 vapor in air and in CO_2, when only its D in H_2 is known. They further permit the calcn. of the unknown D of self-diffusion of CO_2 in CO_2, from the known D of CO_2 in H_2 and D of CO_2 in air, giving the very close values of 0.0925 and 0.0924 cc./sec. Hence, the kinetic radius for CO_2 = 2.2 A., and, further, from the additivity relations, H_2 = 1.2 and air = 1.6 A. If these relations are generally valid, and theoretically substantiated, then $D_{xy} \geq \sqrt{D_{xx}D_{yy}}$.

N. Thon

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Determination of the coefficients of diffusion of vapors of cyclohexane, chloroform, and acetone into air. N. A. Goryunova and R. V. Kuvshinskii (Leningrad Phys.-Tech. Inst.). *Zhur. Tekh. Fiz.* 18, 1421-8(1948).—The diffusion coeffs. D were detd. by the 2nd method of Stefan (*Ann. d. Phys. Chem.* 41, 725(1890)); Leblanc and Wupperman, *C. A.* 10, 1402) by measurements of the rate of evapn. of the liquid through a long cylindrical tube into air. Under conditions of absence of convection, sufficiently long tube, and zero concn. of the vapors at the open end of the tube, $D = (RT/M\beta_a)(L/S)((\partial g/\partial t)/\ln \beta_a/(\beta_a - \beta_1))$, where M = mol. wt., β_a = atm. pressure in mm. Hg, L = length, S = cross-section of the tube, $\partial g/\partial t$ = wt. rate of evapn. (in g./sec.), β_1 = vapor tension of the liquid. The exact value of the app. const. L/S (52.7 cm.$^{-1}$) was detd. by measurements with C_6H_6 and Et_2O which gave values in good agreement with accepted data. The results of the measurements are: cyclohe at 45°, D = 0.086 ± 0.003 cm.^{2}/sec.; $CHCl_3$, at 0 = 0.091 ± 0.002; Me_2CO, at 0°, D = 0.100 ± 0.000.

N. Thon

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Determination of the molecular weights of polymers formed at different stages of polymerization. Polymerization of styrene in the presence of quinone. K. V. Kuvshinskii and E. V. Melekhina (Acad. Sci., U.S.S.R., Leningrad). *Zhur. Fiz. Khim.* 24, 199–201 (1950).—The characteristic viscosity of the polymer forming when the percentage polymerized increases from x to $x + dx$ is given by $[\eta] = [\bar{\eta}] + x\,d[\bar{\eta}]/dx$; $[\eta]$ is the characteristic η of the mixt. at x% polymerized. The equation shows, e.g., that, when $d[\bar{\eta}]/dx$ is const., the mol. wt. of the polymer is independent of x, contrary to Goldfinger, *et al* (*C.A.* **38**, 1045⁹). J. J. Bikerman

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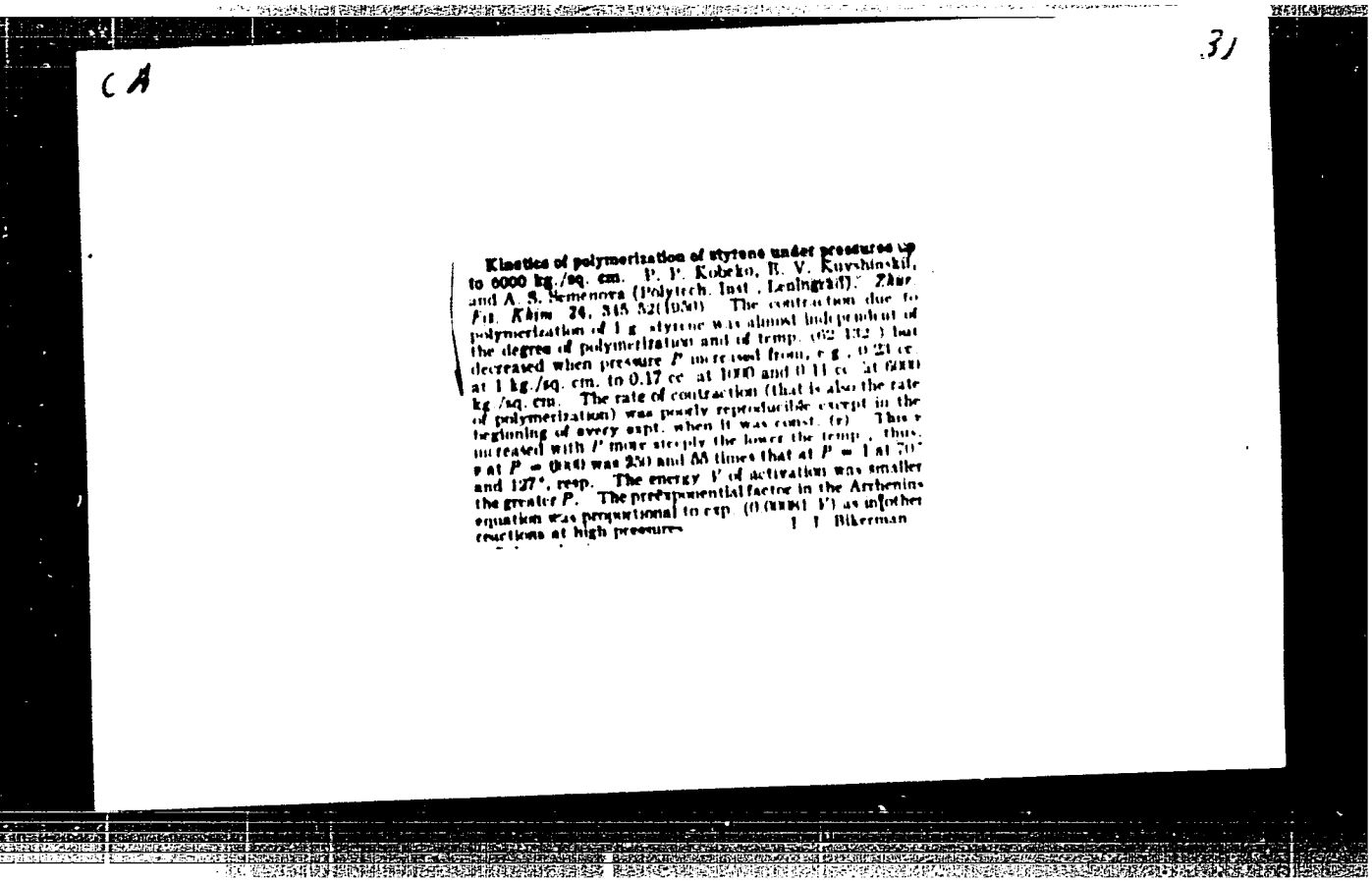

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Kinetics of polymerization of styrene under pressures up to 6000 kg./sq. cm. P. P. Kobeko, B. V. Kuvshinskii, and A. S. Semenova (Polytech. Inst., Leningrad). *Zhur. Fiz. Khim.* 24, 345-52(1950). The contraction due to polymerization of 1 g. styrene was almost independent of the degree of polymerization and of temp. (62-132°) but decreased when pressure P increased from, e.g., 0.21 cc. at 1 kg./sq. cm. to 0.17 cc. at 1000 and 0.11 cc. at 6000 kg./sq. cm. The rate of contraction (that is also the rate of polymerization) was poorly reproducible except in the beginning of every expt. when it was const. (v). This v increased with P more steeply the lower the temp., thus, v at P = 6000 was 250 and 55 times that at P = 1 at 70° and 127°, resp. The energy V of activation was smaller the greater P. The preexponential factor in the Arrhenius equation was proportional to exp. (0.00081 V) as in other reactions at high pressures. I. I. Bikerman

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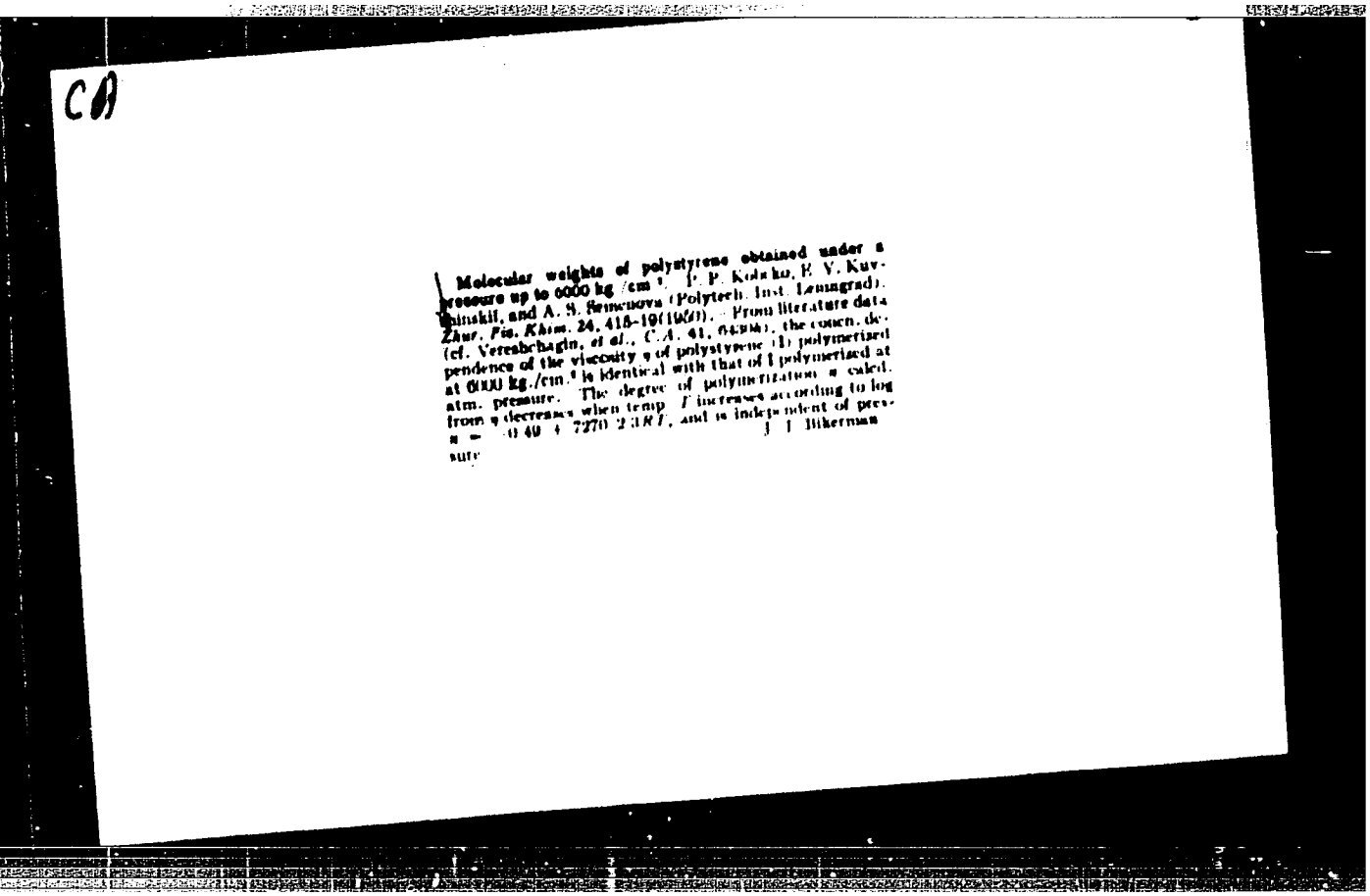

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Molecular weights of polystyrene obtained under a pressure up to 6000 kg./cm.^{2}. [P. P. Kobeko, P. V. Kuvshinskii, and A. S. Semenova (Polytech. Inst. Leningrad). *Zhur. Fiz. Khim.* 24, 418–19(1950).—From literature data (cf. Vereshchagin, *et al.*, C.A. 41, 6438h), the concn. dependence of the viscosity η of polystyrene (I) polymerized at 6000 kg./cm.^{2} is identical with that of I polymerized at atm. pressure. The degree of polymerization n calcd. from η decreases when temp. T increases according to log $n = -0.040 + 7270\ 2.3RT$, and is independent of pressure. J. J. Bikerman

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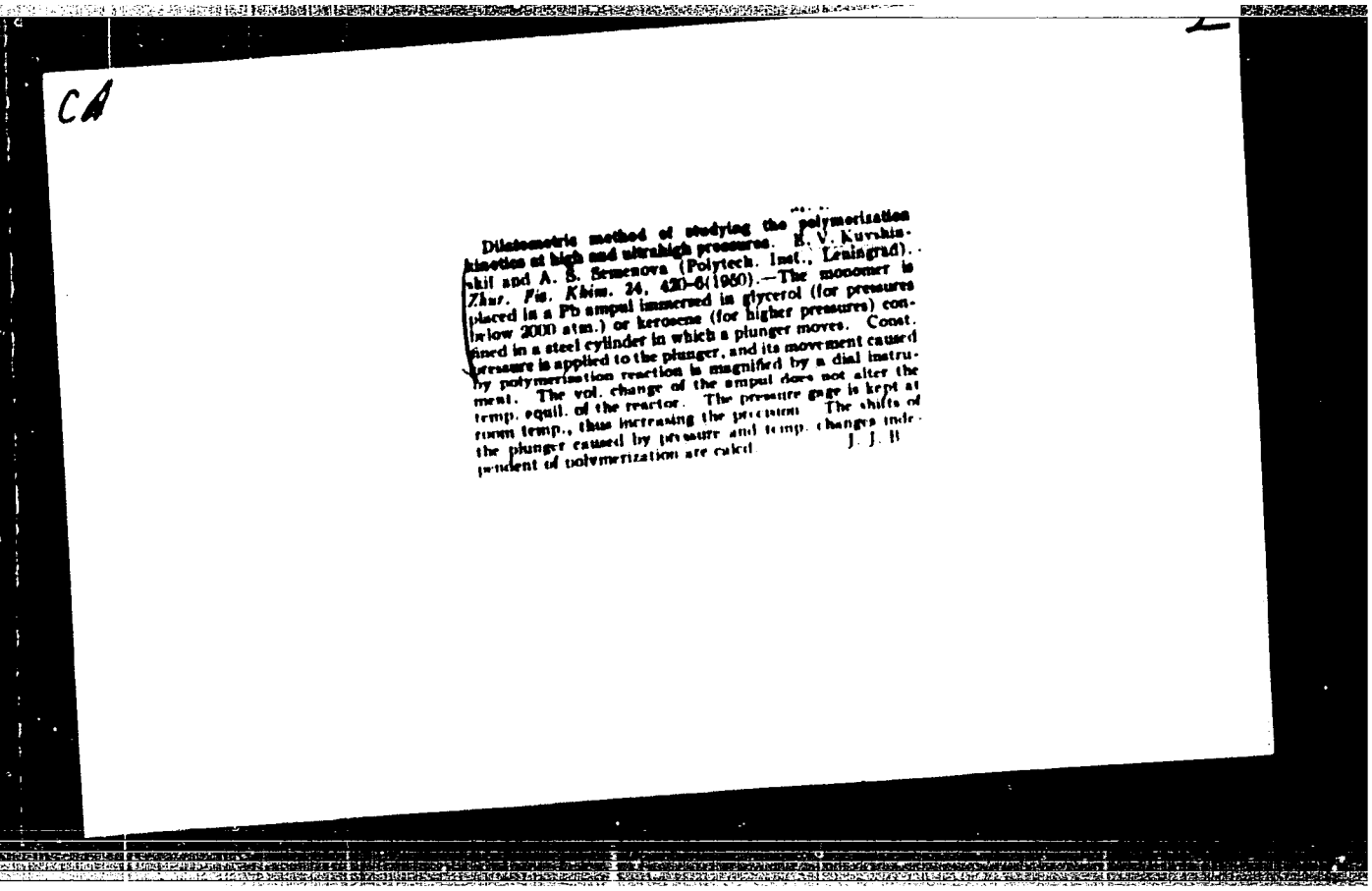

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Dilatometric method of studying the polymerization kinetics at high and ultrahigh pressures. B. V. Kuvshinskii and A. S. Semenova (Polytech. Inst., Leningrad). *Zhur. Fiz. Khim.* 34, 420–6(1960).—The monomer is placed in a Pb ampul immersed in glycerol (for pressures below 2000 atm.) or kerosene (for higher pressures) contained in a steel cylinder in which a plunger moves. Const. pressure is applied to the plunger, and its movement caused by polymerization reaction is magnified by a dial instrument. The vol. change of the ampul does not alter the temp. equil. of the reactor. The pressure gage is kept at room temp., thus increasing the precision. The shifts of the plunger caused by pressure and temp. changes independent of polymerization are calcd. J. J. B

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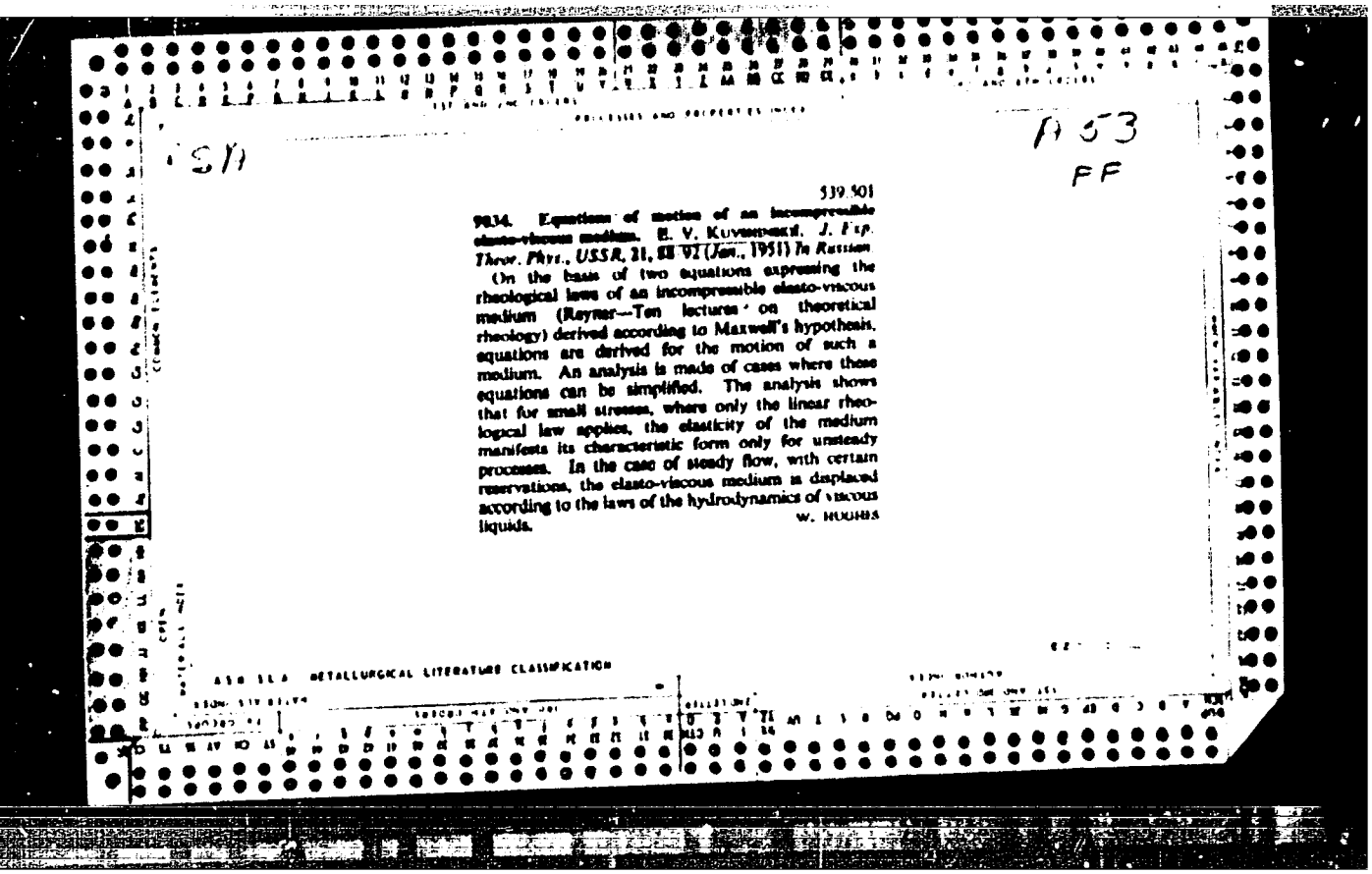

539.501

9834. Equations of motion of an incompressible elasto-viscous medium. E. V. Kuvshinskiĭ. *J. Exp. Theor. Phys., USSR*, 21, 88–92 (Jan., 1951) In Russian

On the basis of two equations expressing the rheological laws of an incompressible elasto-viscous medium (Reyner—Ten lectures on theoretical rheology) derived according to Maxwell's hypothesis, equations are derived for the motion of such a medium. An analysis is made of cases where these equations can be simplified. The analysis shows that for small stresses, where only the linear rheological law applies, the elasticity of the medium manifests its characteristic form only for unsteady processes. In the case of steady flow, with certain reservations, the elasto-viscous medium is displaced according to the laws of the hydrodynamics of viscous liquids.

W. HUGHES

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KUVSHINSKIY, YE. V.

Chemical Abst.
Vol. 48 No. 9
May 10, 1954
General and Physical Chemistry

3
(1) [illegible]

The work by G. M. Bartenev on the thermodynamic theory of rubber elasticity. E. V. Kuvshinskii. *Colloid J.* (U.S.S.R.) 14, 251-2(1952)(Engl. translation).—See *C.A.* 46, 8472*b*.
H. L. H.

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KUVSHINSKIY, Ye. V.

TRELOAR, L.; KUVSHINSKIY, Ye.V. [translator]; GUROV, K.P., redaktor; GERASIMOVA, Ye.S., tekhnicheskiy redaktor

[The physics of rubber elasticity] Fizika uprugosti kauchuka. Perevod s angliiskogo pod red. E.V.Kuvshinskogo. Moskva, Izd-vo inostrannoi lit-ry, 1953. 240 p. [Microfilm] (MLRA 7:10)
(Rubber) (Elasticity)

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KUVSHINSKIY, Ye V.

806. Mechanical properties of polymers in the softening region. Elongation diagrams of raw and vulcanised rubbers. N. A. YEREMOVICH and E. V. KUVSHINSKII. *Zhur. Tekh. Fiz.*, 1953, 23, 1343–9; *Chem. Abs.*, 1956, 49, 4320; *Rubb. Chem. Technol.*, 1956, 29, 718–24. Natural rubber and polybutadiene rubber were stretched at temperatures in the range −100° to + 20°C. and at rates of deformation of 0.05 to 2.5%/sec. From the experimental data curves are constructed for $f = f(\lambda)$ and $\sigma = \sigma(\lambda)$, where $f = P/\epsilon_0$ (P = stress, ϵ_0 = cross-section), $\lambda = l/l_0$ (relative extension of the initial length l_0), $\sigma = P/V$. The σ curves are regular for butadiene rubber at temperatures $\theta \geqq -42$°C, and they are steeper at lower temperatures; below −42°C a peak appears on the initial part of the curve. Similar peaks are observed in natural rubber and in other plastics.

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Kuvshinskiy, Ye.V.

Adiabatic stretching as a method of investigation of the nature of elasticity of rubberlike materials. M. P. Volinov and Ye. V. Kuvshinskii. Zhur. Tekh. Fiz. 25, 2137-53 (1955). Curves are presented for the adiabatic expansion of a pure butadiene-acrylonitrile polymer, starting at 1.5° and 18°, and for a chlorobutadiene rubber, starting with samples at 0, 18, and 93°. It is concluded that this is a good method to study the nature of elasticity for various kinds of deformation forces. Cryst. polymers show S-shaped curves; noncryst. ones do not. W. Jacobson

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Kuvshinskiy, Ye. V.

D-9

USSR / Physics of High Molecular Substances.

Abs Jour : Ref Zhur - Fizika, No 4, 1957, No 9111

Author : Kuvshinskiy, Ye. V., Sidorovich, Ye. A.
Title : Type KS Pendulum Elastometer

Orig Pub : Zh. tekhn. fiziki, 1956, 26, No 4, 878 - 886

Abstract : A pendulum elastometer was developed for the study of the elastic properties of rubber at temperatures ranging from 20 -- 120° under the conditions of impact compression lasting for 0.01 -- 0.1 seconds. The instrument permits the tested rubber to be characterized in terms of the magnitude of its rebound elasticity, the magnitude of the dynamic modulus of elasticity, and also the specific mechanical losses referred to the square of the average stress, and the specific mechanical losses refferred to the square of the maximum deformation.

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APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R000927930007-4"

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KUVUSHINSKIY, Ye.V.

The design origin of poly(methyl methacrylate) destruction surfaces. G. A. Lebedev and E. V. Kuvushinskii. *Doklady Acad. Nauk S.S.S.R.* 108, 1096–7(1956).—Destruction of poly(methyl methacrylate) surfaces were studied with an interference microscope. The destruction was localized in definite specimen sections by lateral cuts with razor blades, 0.1–0.3 mm. deep, and the samples were slowly stretched at 40° to the destruction of the samples. The interference microscope photographs are reproduced.
W. M. Sternberg

Inst. High Molecular Compounds, AS USSR

APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R000927930007-4"

"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R000927930007-4

"Influence of vulcanization

APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R000927930007-4"

"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R000927930007-4

[illegible], [illegible], and [illegible], [illegible].

"Elastic properties and crystallization stresses," a paper presented at the 9th Congress on the Chemistry and Physics of High Polymers, 2[illegible] Jan - 2 Feb 57, Moscow, Polytechnic Inst., Leningrad (Kalinin Inst.)

D-3,0[illegible]4,3[illegible]5

APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R000927930007-4"

"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R000927930007-4

[redacted]

[redacted], V. A., and [redacted]

"Working of polymers on drawing," a paper presented at the 9th Congress [redacted] Research Inst.

B-3,6[redacted],395

APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R000927930007-4"

"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R000927930007-4

KUVSHINSKIY, E. V., and SHCHAVV, S. I.

"Surface changes during degradation of [illegible] polymers," a paper presented at the 5th Congress on the Chemistry and Physics of High Polymers, 28 Jan-2 Feb 57, Moscow, Polymer Research Inst.

B-3,074,325

APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R000927930007-4"

"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R000927930007-4

KUVSHINSKIY, E. V., and SEMEVA, A. S.

"Polymerization of styrene under very high pressure," a paper presented at the 9th Congress on the Chemistry and Physics of High Polymers, 28 Jan-2 Feb 57, Moscow, Organic Chemistry Research Inst.

B-3,084,395

APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R000927930007-4"

"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R000927930007-4

NOVSHINSKIY, Ye. V.

120-3-26/37

AUTHOR: Volodin, V. P., and Kuvshinskiy, Ye. V.

TITLE: Measurement of the Mechanical Dynamic Characteristics of Rubbers. (Izmereniye Mekhanicheskikh Dinamicheskikh Kharakteristik Rezin.)

PERIODICAL: Pribory i Tekhnika Eksperimenta, 1957, No.2, pp. 94 - 98 (USSR).

ABSTRACT: The authors give the description of an instrument similar to that proposed by Marvin, Fitzgerald and Ferry (Ref. 4), but more simple in construction and operation. It can be used to determine, in three independent ways, the dynamic modulus of elasticity and the angle of mechanical losses of rubbers in the frequency range 20-300c/s and in the temperature range -20 to 150°C under the conditions of deformation in axial compression and decompression. The instrument, a cross-section of which is given in Figure 1, uses a vibration generator type G[illegible]K-1 (GMK-1), the necessary temperature being obtained by forcing either water or ethyl alcohol through the envelope 7 for temperature range -10°C to 100°C. An electrical oven was used for temperatures above 100°C and the instrument was cooled by liquid nitrogen below -10°C. The temperature of the sample was measured by a constantan copper thermocouple with accuracy of 0.5°C. Differing from the

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Measurement of the Mechanical Dynamic Characteristics of Rubbers.

installation proposed by Marvin, Fitzgerald and Ferry, two simpler bridge configurations were used (Figures 2 and 3). The determination of the mechanical properties of the material as based on the Kelvin-Voigt model is also discussed. The cross sections of the instrument, two circuit diagrams of the two bridges, three graphs, two tables of numerical results and the equivalent electrical circuit diagram of the Kelvin-Voigt model are given. There are five references, two of which are Slavic.

SUBMITTED: November, 23, 1956.

ASSOCIATION: Leningrad Polytechnic Institute imeni M.I. Kalinin. (Leningradskiy Politekhnicheskiy Institut im. M.I.Kalinina)

AVAILABLE: Library of Congress.

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APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R000927930007-4"

"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R000927930007-4

Kuvshinskiy, Ye. V.

AUTHORS: Volodin, V.P., and Kuvshinskiy, Ye.V. 120-3-21/35

TITLE: Determination of the Dynamic Mechanical Characteristics of Rubbers at Acoustic Frequencies (Opredeleniye mekhanicheskikh dinamicheskikh kharakteristik rezin v zvukovom diapazone chastot)

PERIODICAL: Pribory i Tekhnika Eksperimenta, 1957, No.3, pp. 86 - 91 (USSR).

ABSTRACT: An installation has been developed for measuring the dynamic modulus of elasticity and mechanical loss angle within the frequency range 80 - 4 000 c.p.s. at temperatures from -20 to +120 °C under conditions of small displacement. Fig. 1 shows the main features in a block diagram, viz., the use of a capacitive pickoff for measuring displacement, the measurement of current in the moving coil as an indication of force, the use of a phasemeter to measure the angle between force and displacement. Fig. 2 is a cross-section through the complete assembly. The material to be tested is fabricated as a number of isolators supporting a former made from walrus ivory (s.g. 1.95; $E = 1.3 \times 10^{11}$ dynes/cm^2) in the gap of a large electromagnet. The former carries an exciting coil fed from an audio-oscillator type 3G-10. A micrometer enables a capacitive pickoff to be positioned under the moving system. The circuit which

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120-3-21/35

Determination of the Dynamic Mechanical Characteristics of Rubbers at Acoustic Frequencies.

converts the changes in capacitance into voltage has been described in principle (Ref.5) and also a practical version of the same (Ref.6). The conversion is linear with an error of less than 3% and gives a sensitivity (including the pre-amplifier) of 10^5 V/mm when the gap between the plates of the capacitor is 0.1 mm. The phasemeter is of the switching type described by Forman (Ref.9). It works best with an input in each channel of 20 V, a deviation of ± 3 V producing an error of less than 0.1°. The use of voltmeters at the appropriate points in the circuit guarantees a deviation of less than ± 1 V. The supply voltages are stabilized by ferro-resonant and electronic stabilizers. The main electro-magnet supply is separately stabilized at 76 ± 0.1 mA. It is shown from the theory of the measurement that unless the size of the sample is chosen appropriately to the frequency and material constants, appreciable corrections are required. For example, when the magnitude of the elastic modulus is 5×10^7 dynes/cm^2, the frequency is 4 kc/s and the thickness of the sample is 0.1 cm, the correction is almost 15%. The experimentally determined relation between phase (force-displacement) and frequency differs from theory as noted by

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Determination of the Dynamic Mechanical Characteristics of Rubbers at Acoustic Frequencies.

nearly all other authors using electro-dynamic methods. This topic is to be the subject of a separate article. Measurements were discontinued whenever the error exceeded 10%. Fig.4 shows the variation of modulus and angle of loss ($\tan \delta$) with frequency for a natural rubber at temperatures of -10 °C and 75 °C. The shape factor of the sample, D (thickness divided by cross-sectional area) was 1/40 cm^{-1}. The error in measuring the modulus and loss angle reached 25% at twice the frequency of mechanical resonance. Measurements were made on CKC-30A sulphur-vulcanized rubber by the present method and by two other methods; the "travelling-wave" and "force and velocity" methods. The table and Fig. 5 show that the agreement is quite satisfactory. The maximum force exerted by the vibrator was 5×10^5 dynes at a coil current of 0.5 A. The flux density in the gap was 11 000 gauss and the moving mass was 13.8 g. The minimum recorded displacement was 10^{-5} cm and the minimum angle between force and displacement 1^0. The least measured $\tan \delta$ was 0.02. The upper limit of hardness was 2×10^9 dynes/cm. The lower limit of frequency was set by the phasemeter and could be reduced to 0.01 c.p.s. by using an HΦ-2 in conjunction

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Determination of the Dynamic Mechanical Characteristics of Rubbers at Acoustic Frequencies.

with an НГ-2 oscillator. A.P. Rudakov and L.L. Sul'zhenko took part in the work. There are 5 figures, 1 table and 10 references, 5 of which are Slavic.

ASSOCIATION: Leningrad Polytechnical Institute imeni M.I.Kalinin (Leningradskiy politekhnicheskiy institut im. M.I. Kalinina)

SUBMITTED: March 18, 1957.

AVAILABLE: Library of Congress

APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R000927930007-4"

"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R000927930007-4

KUVSHINSKY Ye. V.

120-5-33/35

AUTHORS: Votinov, M.P., and Kuvshinskiy, Ye.V.

TITLE: A "Reochord" Extensometer for the Determination of the Expansion of Rubber in Stretching Tests (Reokhordnyy ekstensometr dlya opredeleniya udlineniya rezin pri ispytaniyakh na rastyazheniye)

PERIODICAL: Pribory i Tekhnika Eksperimenta, 1957, No.5, pp. 122-123 (USSR).

ABSTRACT: The principle of the extensometer and its construction is shown in Fig. 1. The specimen 1 is kept in position by means of the four knife edges 2. The knife edges are pressed against the specimens by means of a rubber band 5. Two blocks 3 made from electrically insulating material are placed on the ends of each of the knife edge carrying carriages. Nichrome wires 4 are let through holes in these blocks and are kept parallel to the direction of extension of the specimen. The resistance between the points A, B and C, D on the wires are measured by means of the DC bridge also shown on Fig.1. The off-balance current can be exhibited on the screen of a magneto-electric oscillograph, type МПО-2. A typical oscillogram is shown in Fig.2 and corresponds to a deformation at a rate of 100% per sec. in an extension-compression cycle. The extensometer may be used in the measurement of expansion when the rates of

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120-5-33/35

A "Reochord" Extensometer for the Determination of the Expansion of Rubber in Stretching Tests.

deformation are 100-400% per sec. and in the temperature range -15° to $+85^{\circ}$C (Ref.1).
There are 2 figures and 2 Slavic references.

ASSOCIATION: Leningrad Polytechnical Institute imeni M.I. Kalinin (Leningradskiy Politekhnicheskiy Institut imeni M.I. Kalinina)

SUBMITTED: March 26, 1957.

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"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R000927930007-4

Kuvshinskiy

120-6-23/36

AUTHORS: Votinov, M.P., Kuvshinskiy, Ye.V., and Sul'zhenko, L.L.

TITLE: A Device for Studying Thermoelastic Properties of Adiabatically-stressed Rubber (Ustanovka dlya izucheniya termouprugikh svoystv rezin v adiabaticheskikh usloviyakh rastyazheniya)

PERIODICAL: Pribory i Tekhnika Eksperimenta, 1957, No.6, pp. 92 - 94 (USSR).

ABSTRACT: Two devices are described which can be used to study thermoelastic properties and "crystallisation" processes in resins using the method of adiabatic extension in the temperature range -20 to +100 °C and at different speeds of deformation. The first apparatus is shown in Fig.1 and the second in Fig.2. The aim of the present work was to eliminate, as far as possible, heat losses, and to increase the accuracy of temperature measurement during the process of deformation. It was established that thermal losses are mainly due to convection. They are particularly large at low speeds of deformation, i.e. when the duration of the process is up to 100 to 125 sec. Heat losses in the first device were eliminated by using a vacuum chamber evacuated to a pressure of 10^{-2} to 10^{-3} mm Hg. The elimination of heat losses meant that specimens with larger cross-sections could be used (100 mm^2). Manganin-constantan

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120-6-23/26

A Device for Studying Thermoelastic Properties of Adiabatically-stressed Rubber.

thermocouples were used to measure the temperature. Since the thermal conductivity of manganin-constantan is lower by a factor of 15 than that of copper, the heat losses due to this source were also lowered (the diameter of the wires was 0.05 mm). These measures made it possible to lower the heat losses to 8%. In the second apparatus, it was not necessary to use a vacuum chamber and specimens of high area of cross-sections since in these experiments the duration of deformation was only 1.5 to 6 sec. The general heat losses at the end of a cycle calculated from cooling curves of extended specimens, did not in this case exceed 3 to 4%. The two devices are shown in Figs. 1 and 2. The extensions were measured by transforming them into electrical impulses using the off-balance current of a bridge. A similar scheme was used for the measurement of the stress. The mechanical work performed on the specimen could be estimated to an accuracy ± 8%. The apparatus was used to study deformation of resins and the results were reported by the present author in Refs. 8 to 10. There are 3 diagrams and 10 references, 5 of which are Slavic.

ASSOCIATION: Leningrad Polytechnical Institute im. M.I. Kalinin (Leningradskiy Politekhnicheskiy Institut im. M.I. Kalinina)

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APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R000927930007-4"

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120-6-23/36

A Device for Studying Thermoelastic Properties of Adiabatically-stressed Rubber.

SUBMITTED: April 24, 1957

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"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R000927930007-4

KUVSHINSKIY, Ye. V. and LAZURKINA, Yu. S.

XX "On the Qualities of Polymeric Glass and the Mechanics of Glass Formation of High Molecular Combinations"

Inter-vuz Scientific Conference (Mezhvuzovskiye nauchnyye Konferentsii)

Vestnik Vysshey shkoly, 1957, # 9, pp. 73 - 76 * (USSR)

Abst: In January 1957, the Second All-Union Conference on Photosynthesis took place, organised by the Institute of Plant Physiology of the Academy of Sciences, USSR, and by the Facultys of Soil-Biology of the Moskva University. About 700 representatives of 130 scientific-research institutes, vuzes and ministeries were present. The introductory report was made by Academician A. L. Kursanov who described the development of photosynthesis during the last ten years and invited the scientists to concentrate their work on the application of radioactive and stable isotopes. Nearly 100 reports were read: 13 on photochemistry, 7 On the investigation of chloroplast structure, 12 on the investigation of pigments, 9 on the photosynthesis of water plants, bacteria, etc.

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"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R000927930007-4

PA-2796

AUTHOR: KUVSHINSKIY, YE.V., SIDOROVICH, YE.A.

TITLE: Influence of Vulcanization on Dynamic Elastic Properties of Rubber. (Vliyaniye vulkanizatsii na dinamicheskiye elasticheskiye svoystva rezin, Russian.)

PERIODICAL: Zhurnal Tekhn. Fiz., 1957, Vol 27, Nr 4, pp 702 - 706 (U.S.S.R.)
Received: 5 / 1957 Reviewed: 6 / 1957

ABSTRACT: From smoked sheets and from synthetic polyisopren - butadien + sodium -, divenyl - styrol and divenyl - nitril caoutchoucs a series of crude rubber samples was prepared, which differed in their degree of vulcanization. In order to obtain this effect, the contents of sulphur and of catalyzer substance varied as well as temperature and the time of vulcanization. The dependence of the dynamic characteristics of rubber samples with different degrees of vulcanization can be explained on the basis if these investigations in the following way: The chains of the vulcanized substance are interconnected by firm chemical and somewhat weaker physical bindings thus forming a network. With increasing temperature the number and rigidity of the latter decreases considerably. The bounce-elasticity, on the other hand, increases, at the expence of increase of the flexibility of the chains, whereas a rise in temperature leads to a weakening and reduction of the number of physical bindings, which implies a reduction of the total number of chained domains which give the network its elasticity, and produces an increase of the number of chains which have lost their

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PA-2796

Influence of Vulcanization on Dynamic Elastic Properties of Rubber.

connection with the network except at one end. Those chains slow down the motion of the elastic elements and diminsh elasticity In the same way the change of the dynamic Young's modulus with temperature can be explained The properties of crude rubber samples originating from the same raw material are determined by the density of the vulcanizing network. A control of the conditionally balanced modulus makes it possible to obtain rubber with different characteristics which can be determined beforehand by means of the variation of recipes and of the conditions of vulcanization. The entire test takes only 2o min. (With 7 illustrations, 1 table and 4 citations from Slav publications).

ASSOCIATION: Not given
PRESENTED BY:
SUBMITTED: 26.9.1956
AVAILABLE: Library of Congress

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APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R000927930007-4"

"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R000927930007-4

GARBUZOV, Andrey Ignat'yevich, dotsent; MISHIN, Vasiliy Porfir'yevich, dotsent; TILE, Vera Karlovna, assistent; KUVSHINSKIY, M.N., red.; ZUYEVA, N.K., tekhn.red.

[Semimicro qualitative chemical analysis] Kachestvennyi khimicheskii polumikroanaliz. Moskva, Gos.izd-vo med.lit-ry, 1960. 230 p. (MIRA 13:5)
(Chemistry, Analytical--Qualitative)

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"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R000927930007-4

PA - 3556

AUTHOR: KUVSHINSKIY, Ye.V., FOMICHEVA, M.M.

TITLE: Influence of Rubber Molecular Weight on its Mechanic Properties. (Vliyaniye molekulyarnogo vesa kauchuka na dinamicheskiye mekhanicheskiye svoystva rezin, Russian)

PERIODICAL: Zhurnal Tekhn.Fiz. 1957, Vol 27, Nr 5, pp 1019-1028 (U.S.S.R.)

ABSTRACT: At temperatures of 20, 60 and 100° C the modifications of the elasticity modulus and of the rebounding of rubber of fractions of divinylstyrol caoutchouc SKS-30-A were investigated in an interval of molecular weights of 45 000 to 620 000 with different vulcanization depths (in the case of a modification of the conditionally balances modulus from 5 to 70 kg/qcm). The dynamic elasticity modulus at room- as well as at increased temperature depends only little on the molecular weight of the initial caoutchouc. At higher temperatures the elasticity of rubber is mainly determined by the depth of vulcanization. As a measure the conditional balanced modulus may serve. At low temperatures (20° C) elasticity grows with the depth of vulcanization, but in the case of rubbers made from fractions of different molecular weights this growth differs as to extent. At 20° C the increase of vulcanization depth increases the elasticity of rubbers of low

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Influence of Rubber Molecular Weight on its Mechanic Properties. PA - 3556

molecular fractions (45 000) less than in the case of those of high molecular fractions (more than 133 000). The amount of maximum elasticity of rubbers obtained from caoutchoucs of the same molecular weights does not depend on the character of the accelerator used. (With 5 Tables, 6 Illustrations, and 7 Slavic References).

ASSOCIATION: VNIISK, Leningrad
PRESENTED BY:
SUBMITTED: 22.10.1956
AVAILABLE: Library of Congress

Card 2/2

APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R000927930007-4"

"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R000927930007-4

Kuvshinskiy, Ye. V.

AUTHORS: Votinov, M. P., and Kuvshinskiy, Ye. V. 57-10-15/33

TITLE: Thermoelastic Phenomena in Synthetic Rubbers at Adiabatic Deformation Reaching the Break (Termouprugiye yavleniya v rezinakh iz SKS-30A i SKB pri adiabaticheskom deformirovanii do razryva).

PERIODICAL: Zhurnal Tekhn. Fiz., 1957, Vol. 27, Nr 10, pp. 2303-2306 (USSR).

ABSTRACT: On the strength of the investigations given here following can be said. 1) The expansion of the vulcanisates SKS-30A and SKB reaching the break is accompanied by a heat development equivalent to the tension work, a fact which points out the kinetic nature of the elastic forces in these vulcanisates. 2) An alteration of the vulcanization process of a mixture and the introduction of a filler leads only to an alteration of the rubber elasticity modulus. The accordances to a rule in the transformation of work into heat are not affected with it. The lacking of the crystallization processes even in important tensions ($\lambda \approx 6 \div 7{,}5$) is obviously determined in the first place by the irregular construction of the hydrocarbon skeleton of the final caoutchoucs. 3) In the case of rubbers with active fillers which were obtained under optimum conditions by vulcaniza-

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